

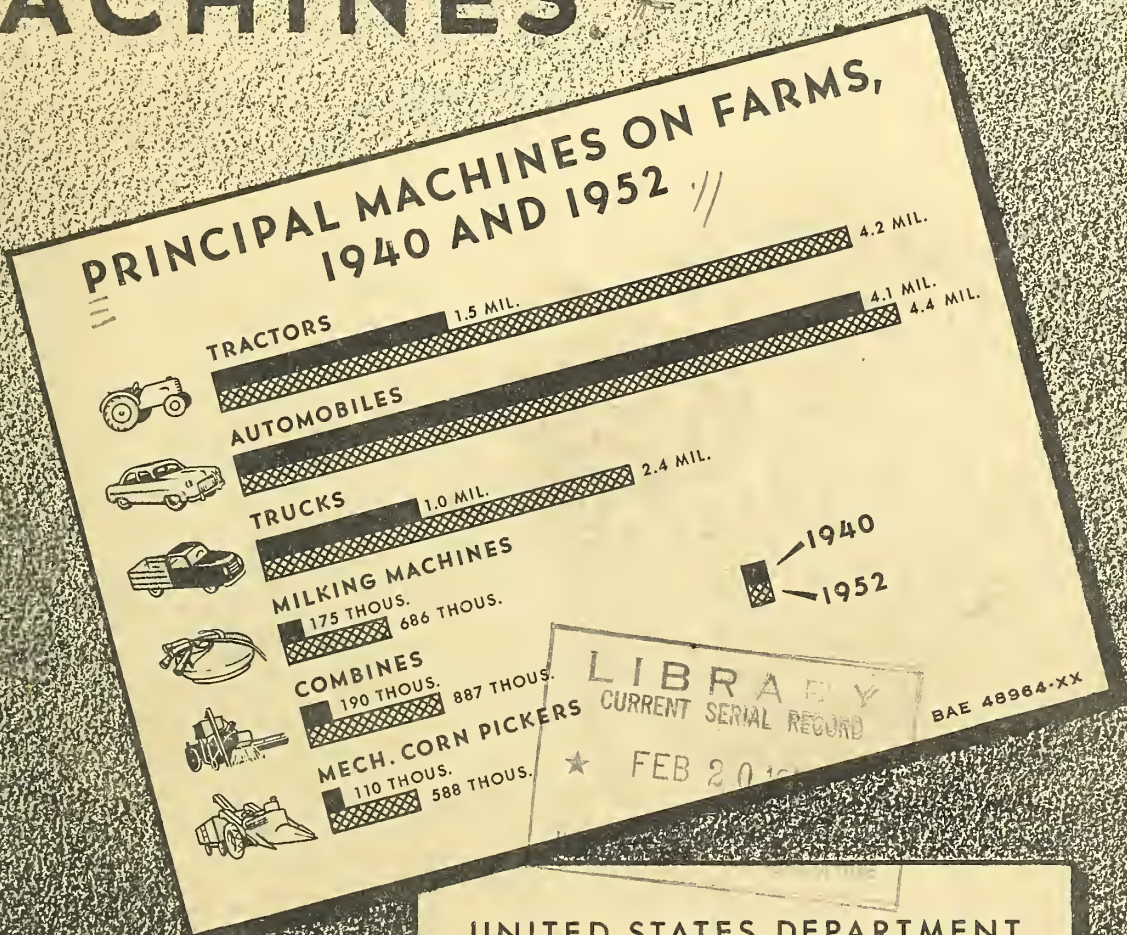
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Farm Power and FARM MACHINES



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SOURCE OF MATERIAL

The estimates of farm machines and their distributions by size and age in this report are derived from several sources. Some of the data are taken directly from the Census of Agriculture. Others were derived from domestic shipment and import data of the Bureau of the Census (table 23). Still other data were prepared from sample surveys. Census of Agriculture numbers were used as bench-mark data whenever available. Domestic shipment data are the major source of information for preparing annual National estimates of machine numbers. Sample data were largely used to distribute National totals by States and geographic areas and to make size and age distributions.

In February 1951, the voluntary crop reporters of the Department of Agriculture supplied information for January 1, 1951, on numbers, age and size of specified farm machines. They reported the numbers and kinds of tractors, combines, and balers and the numbers of tractor moldboard plows, tractor disk plows, tractor listers, tractor one-ways, grain binders, corn pickers, power sprayers, power dusters, power elevators, hammer mills, field forage harvesters, and stationary silo fillers on their farms on January 1, 1951, and also the size of their farms. They reported the age of these machines, except tractors, and the size of machines, other than tractors, balers, hammer mills, and field forage harvesters.

In February 1952, crop reporters reported the numbers and kinds of tractors and the numbers of automobiles, motortrucks, combines, corn pickers, corn (row) binders, field forage harvesters, stationary silo fillers, and milking machines on their farms on January 1, 1952, and April 1, 1950, as well as the size of their farms.

The 1951 and 1952 data from crop correspondents were tabulated by size of farm groups. Appropriate weights of the Bureau of the Census were used in analyzing the material supplied by the crop correspondents.

In the February 1951 and 1952 surveys of crop reporters, usable schedules were returned by more than 25,000 farmers in each year. These farmers reported about 36,500 tractors on their farms on January 1, 1951, and about 38,400 tractors on January 1, 1952.

For purposes of comparison, this report carries census figures as well as estimates of machinery from other sources for years before January 1, 1951. All estimates of this report, other than the census figures, were derived from sample studies and should be considered only as approximations.

Except for the 3-year old and older class, numbers of horses and mules are published estimates of the United States Department of Agriculture. This class is estimated by subtracting from the total number of horses and mules on January 1 of each year, the number of colts less than 1 year of age, 98 percent of the colt crop a year earlier, and 97 percent of the colt crop 2 years earlier.

FARM POWER AND FARM MACHINES

By

Albert P. Brodell and Paul E. Strickler
Agricultural Economists

and

Paul P. Wallrabenstein, Agricultural Statistician

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FARM TRACTORS

On January 1, 1910, about 1,000 tractors (exclusive of steam tractors) were on farms. Ten years later the number had increased to 246,000 (table 1). Although the actual increase in tractor numbers from 1910 to 1920 was less than for any later period of similar length, the early period was of especial significance in that machine power was then first extensively used for draw-bar work on farms.

Since 1910 there have been continuous annual increases in numbers of farm tractors except in the depression years of the early 1930's. During the 10 years ended with January 1, 1952, numbers of farm tractors more than doubled. The increase of the last decade exceeded the increase in numbers of any 10-year period before 1942 by more than 200 percent.

Farm tractors first became important in the West and in the North Central States. Since 1945, percentage increases in tractor numbers in most of the Southern States (table 2) have been substantially above the United States average.

Of the tractors on farms on January 1, 1952, about 89 percent were wheel tractors including the home-made, about 4 percent were crawlers, and about 7 percent were garden tractors (table 3).

Numbers of factory-made wheel tractors and crawler tractors on farms were up about 65 percent from 1945 to 1952. Farmer's purchases of tractors in recent years have been large (table 23). The number of garden

Table 1.- Motor vehicles, specified machines, horses and mules, United States, January 1, 1910-52 ^{1/}

Year	: Tractors: (exclu- sive of : steam)	: Motor- trucks	: Auto- mobiles	: Grain : combines	: Corn : pickers	: Farms : with : milking : machines	Horses and mules		
							: All ages: 2/	: Percentage of total 3 years : old and : over	: Colts : under : 1 year
	: Thou- sands	: Thou- sands	: Thou- sands	: Thou- sands	: Thou- sands	: Thou- sands	: Thou- sands	: Per- cent	: Per- cent
1910	: 1	0	50	1	-	12	24,211	74.4	-
1911	: 4	2	100				24,847	74.3	8.7
1912	: 8	5	175				25,277	74.2	8.9
1913	: 14	10	258				25,691	74.3	9.0
1914	: 17	15	343				26,178	74.1	9.0
1915	: 25	25	472				26,493	74.0	8.9
1916	: 37	40	687				26,534	73.8	8.9
1917	: 51	60	966				26,659	74.4	8.3
1918	: 85	89	1,502				26,723	75.5	7.8
1919	: 158	111	1,760				26,490	77.2	7.0
1920	: 3/ 246	3/ 139	3/2,146	4	10	55	25,742	78.9	6.2
1921	: 343	207	2,382				25,137	81.3	5.2
1922	: 372	263	2,425				24,588	83.9	4.5
1923	: 428	316	2,618				24,018	86.2	4.0
1924	: 496	363	3,004				23,285	87.7	3.6
1925	: 549	459	3,283				22,569	88.9	3.4
1926	: 621	559	3,605				21,986	89.5	3.4
1927	: 693	662	3,820				21,192	89.7	3.3
1928	: 782	753	3,820				20,448	89.9	3.2
1929	: 827	840	3,970				19,744	90.3	3.1
1930	: 3/ 920	3/ 900	3/4,135	61	50	100	19,124	90.6	3.0
1931	: 997	920	4,077				18,468	91.0	2.8
1932	: 1,022	910	3,798				17,812	91.4	2.6
1933	: 1,019	865	3,399				17,337	91.8	2.7
1934	: 1,016	875	3,399				16,997	91.5	3.2
1935	: 1,048	890	3,642				16,683	90.1	4.0
1936	: 1,125	923	3,735				16,226	88.2	4.5
1937	: 1,230	990	3,962				15,802	86.5	4.9
1938	: 1,370	1,042	4,109				15,245	85.1	5.3
1939	: 1,445	1,020	4,030				14,792	84.6	5.1
1940	: 1,545	3/1,047	3/4,144	190	110	175	14,478	84.3	5.2
1941	: 1,675	1,095	4,330	225	120	210	14,104	84.4	5.2
1942	: 1,885	1,160	4,670	275	130	255	13,655	84.8	4.6
1943	: 2,100	1,280	4,350	320	138	275	13,231	86.1	3.9
1944	: 2,215	1,385	4,185	345	146	300	12,613	87.5	3.7
1945	: 3/2,422	3/1,490	3/4,148	3/ 375	168	3/ 365	11,950	88.7	3.3
1946	: 2,560	1,550	4,260	420	203	440	11,108	89.7	2.8
1947	: 2,735	1,700	4,350	465	236	525	10,129	90.6	2.6
1948	: 2,980	1,900	4,225	535	299	575	9,279	91.5	2.5
1949	: 3,315	2,065	4,290	620	372	610	8,498	91.9	2.4
1950	: 3/3,615	3/2,209	3/4,207	3/ 714	3/ 456	3/ 636	7,781	92.3	2.2
1951	: 3,940	2,310	4,280	810	522	655	7,067	92.7	2.0
1952	: 4,170	2,410	4,350	887	588	686	6,293	93.2	1.9

1/ "Facts for Industry" reports of the Bureau of the Census, annual registrations of motor vehicles, and results of enumerative surveys were used in developing estimates for years and machines not covered by census reports.

2/ Agricultural Statistics and Livestock Reports of the Bureau of Agricultural Economics.

3/ Census of Agriculture. Census dates January 1, 1920 and 1945; April 1, 1930, 1940, and 1950.

Table 2.- Tractors on farms, by States, specified years

State and group	Census					Estimated	
	Jan. 1 1920	April 1 1930	April 1 1940	April 1 1945	April 1 1950 1/	Jan. 1 1951	Jan. 1 1952
	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands
Maine	0.6	3.4	8.1	14.8	16.7	17.2	17.7
New Hampshire	.2	1.1	3.1	6.1	7.0	7.4	7.7
Vermont	.4	2.4	3.6	7.3	10.7	11.6	12.1
Massachusetts	.6	3.9	7.3	14.0	14.7	15.3	15.8
Rhode Island	.1	.6	1.0	2.0	1.9	2.2	2.3
Connecticut	.4	2.7	5.3	9.8	11.9	12.5	13.2
New York	7.5	40.4	58.9	93.3	119.7	126.9	132.2
New Jersey	.9	8.1	12.9	19.8	26.2	28.0	29.0
Pennsylvania	5.7	33.5	54.8	92.6	125.9	134.9	141.6
Delaware	.2	1.6	2.7	4.6	6.1	6.8	7.0
Maryland	1.5	7.2	10.3	18.8	29.9	33.0	35.1
Northeast	18.1	104.9	168.0	283.1	370.7	395.8	413.7
Ohio	10.5	53.0	90.0	130.5	182.6	196.5	206.4
Indiana	9.2	42.0	73.2	105.3	154.1	166.9	176.2
Illinois	23.1	69.6	126.1	174.3	234.9	251.5	263.5
Iowa	20.3	66.2	128.5	181.0	241.1	257.1	269.6
Missouri	7.9	25.0	45.2	76.1	125.9	139.3	148.4
Corn Belt	71.0	255.8	463.0	667.2	938.6	1,011.3	1,064.1
Michigan	5.9	34.6	66.5	110.1	149.4	159.9	166.2
Wisconsin	9.4	50.2	81.2	123.3	171.6	184.6	193.3
Minnesota	15.5	48.5	105.1	152.6	204.4	218.4	226.2
Lake States	30.8	133.3	252.8	386.0	525.4	562.9	585.7
North Dakota	13.0	37.6	49.4	74.0	98.7	104.8	109.4
South Dakota	12.9	33.8	44.2	62.8	88.5	95.8	100.2
Nebraska	11.1	40.7	70.8	96.2	127.4	136.3	142.0
Kansas	17.2	66.3	95.1	116.6	146.5	153.9	160.1
Great Plains	54.2	178.4	259.5	349.6	461.1	490.8	511.7
West Virginia	.6	2.8	3.7	6.8	13.9	15.9	17.5
Kentucky	2.0	7.3	11.9	24.4	59.2	68.2	74.8
Tennessee	1.9	6.9	11.8	24.1	59.8	69.2	75.9
Virginia	2.4	9.8	12.0	23.4	48.2	55.3	60.7
North Carolina	2.3	11.4	12.8	31.2	73.5	85.5	93.2
Appalachian	9.2	38.2	52.2	109.9	254.6	294.1	322.1
South Carolina	1.3	3.5	4.8	12.4	30.3	35.6	40.9
Georgia	2.3	5.9	9.3	24.6	60.6	71.0	77.5
Florida	.7	5.2	7.7	12.8	22.1	24.6	27.3
Alabama	.8	4.7	7.6	17.1	45.9	53.5	59.8
Southeast	5.1	19.3	29.4	66.9	158.9	184.7	205.5
Mississippi	.7	5.5	10.6	21.1	51.9	61.2	68.6
Louisiana	2.8	5.0	9.5	17.6	36.1	41.6	47.0
Arkansas	1.8	5.7	12.6	26.5	60.4	71.0	77.6
Delta	5.3	16.2	32.7	65.2	148.4	173.8	193.2
Oklahoma	6.2	26.0	45.4	70.4	93.8	100.1	102.8
Texas	9.0	37.3	98.9	162.4	233.1	252.2	265.8
Okla.-Texas	15.2	63.3	144.3	232.8	326.9	352.3	368.6
Montana	7.6	19.0	22.6	31.7	45.0	48.5	51.1
Idaho	1.6	4.7	11.1	20.3	39.4	44.5	47.1
Wyoming	1.1	4.1	6.5	9.9	15.6	17.1	18.4
Colorado	5.0	13.3	21.4	32.8	53.2	58.3	61.4
New Mexico	.5	2.5	5.8	10.7	15.9	17.3	18.4
Arizona	.9	2.6	4.1	6.4	9.7	10.6	11.2
Utah	.6	1.4	3.0	6.9	16.0	18.5	19.8
Nevada	.2	.4	.7	1.8	3.2	3.7	4.0
Mountain	17.5	48.0	75.2	120.5	198.0	218.5	231.4
Washington	2.6	8.4	18.0	32.1	55.0	61.3	66.7
Oregon	3.1	9.8	17.1	28.6	52.5	58.5	63.2
California	13.9	44.4	55.2	79.8	125.0	136.0	144.1
Pacific	19.6	62.6	90.3	140.5	232.5	255.8	274.0
United States	246.0	920.0	1,567.4	2,421.7	3,615.1	3,940.0	4,170.0

1/ Preliminary revised.

Table 3.- Tractors on farms, by type, and by States, 1945, 1950, and 1952 1/

State and group	Wheel and homemade			Crawler			Garden		
	1945	1950	1952	1945	1950	1952	1945	1950	1952
	Census	Census	estimated	Census	Census	estimated	Census	Census	estimated
	Number	Number	Number	Number	Number	Number	Number	Number	Number
Maine	12,617	14,155	15,000	452	709	800	1,725	1,811	1,900
New Hampshire	4,702	5,398	6,000	197	298	350	1,195	1,255	1,350
Vermont	6,423	9,275	10,500	381	558	625	523	822	950
Massachusetts	9,750	10,769	11,400	874	699	725	3,402	3,252	3,700
Rhode Island	1,733	1,456	1,700	43	49	50	186	434	550
Connecticut	7,963	9,044	9,700	499	700	800	1,278	2,205	2,700
New York	83,302	103,811	113,000	3,860	5,138	6,200	6,130	10,757	13,000
New Jersey	16,267	20,670	22,500	1,060	1,236	1,325	2,482	4,275	5,200
Pennsylvania	82,377	107,659	119,000	4,336	4,777	5,100	5,925	13,471	17,500
Delaware	4,336	5,460	6,200	40	131	150	228	539	650
Maryland	17,463	26,096	30,000	734	815	875	592	2,974	4,200
Northeast	246,933	313,793	345,000	12,476	15,110	17,000	23,666	41,795	51,700
Ohio	121,886	158,753	173,000	1,720	2,853	3,400	6,880	20,965	28,000
Indiana	102,113	135,713	150,000	719	2,116	2,700	2,431	16,306	23,500
Illinois	169,728	216,649	238,000	2,131	2,670	3,000	2,411	15,574	22,500
Iowa	178,880	230,751	255,000	958	1,692	2,100	1,211	8,647	12,500
Missouri	74,275	117,715	137,000	800	1,913	2,400	1,035	6,236	9,000
Corn Belt	646,882	859,581	955,000	6,328	11,244	13,600	13,968	67,728	95,500
Michigan	101,615	133,654	147,000	3,020	3,031	3,200	5,485	12,687	16,000
Wisconsin	119,883	162,896	182,000	1,249	2,421	3,000	2,148	6,306	8,300
Minnesota	149,495	196,457	215,000	1,584	3,614	4,500	1,476	4,290	6,700
Lake States	370,993	493,007	544,000	5,853	9,066	10,700	9,109	23,283	31,000
North Dakota	72,989	95,381	105,000	853	1,908	2,400	142	1,383	2,000
South Dakota	62,185	86,253	97,000	498	945	1,200	89	1,343	2,000
Nebraska	95,003	123,625	137,000	742	1,626	2,000	458	2,101	3,000
Kansas	113,464	138,736	150,000	2,571	2,939	3,100	616	4,823	7,000
Great Plains	343,641	443,995	489,000	4,664	7,418	8,700	1,305	9,650	14,000
West Virginia	5,675	10,591	13,000	421	614	700	767	2,730	3,800
Kentucky	23,084	55,543	70,000	565	975	1,100	760	2,675	3,700
Tennessee	22,956	55,476	70,000	580	1,384	1,700	516	2,943	4,200
Virginia	20,858	40,289	50,000	994	1,635	1,900	1,566	6,332	8,800
North Carolina	29,465	68,744	87,000	1,174	2,205	2,600	550	2,585	3,600
Appalachian	102,038	230,643	290,000	3,734	6,813	8,000	4,159	17,265	24,100
South Carolina	11,401	28,038	38,000	682	1,133	1,300	364	1,158	1,600
Georgia	22,954	57,012	73,000	1,020	1,763	2,100	674	1,801	2,400
Florida	9,826	18,782	23,000	1,667	1,437	1,800	1,319	1,913	2,500
Alabama	15,932	42,890	56,000	859	1,303	1,500	269	1,679	2,300
Southeast	60,113	146,722	190,000	4,228	5,636	6,700	2,626	6,551	8,800
Mississippi	19,501	49,121	65,000	1,005	1,598	1,850	571	1,204	1,700
Louisiana	16,539	33,771	44,000	695	930	1,100	396	1,358	1,900
Arkansas	25,651	57,012	73,000	582	1,036	1,250	304	2,369	3,400
Delta	61,691	139,904	182,000	2,282	3,564	4,200	1,271	4,931	7,000
Oklahoma	68,627	88,596	96,000	917	1,289	1,450	851	3,919	5,400
Texas	157,707	223,223	253,000	3,502	4,041	4,350	1,172	5,817	8,400
Okla-Texas	226,334	311,819	349,000	4,419	5,330	5,800	2,023	9,736	13,800
Montana	29,371	39,393	44,000	2,113	3,721	4,400	241	1,877	2,700
Idaho	15,778	31,032	37,000	4,276	6,716	7,800	245	1,649	2,300
Wyoming	9,199	14,221	16,700	551	1,106	1,300	105	279	400
Colorado	29,853	47,933	55,000	2,472	3,462	3,900	441	1,792	2,500
New Mexico	10,312	14,763	17,000	309	468	500	114	640	900
Arizona	5,338	7,915	9,000	870	1,485	1,700	164	348	500
Utah	5,674	13,709	17,000	833	1,253	1,400	369	1,035	1,400
Nevada	1,557	2,656	3,300	248	431	500	22	126	200
Mountain	107,082	171,622	199,000	11,672	18,642	21,500	1,701	7,746	10,900
Washington	20,278	34,601	41,000	9,024	12,072	13,500	2,748	8,382	12,200
Oregon	21,084	34,904	41,000	5,542	9,425	11,000	2,020	8,185	11,200
California	47,826	74,782	87,000	28,287	39,733	43,300	3,726	10,448	13,800
Pacific	89,188	144,287	169,000	42,853	61,230	67,800	8,494	27,015	37,200
United States	2,254,895	3,255,373	3,712,000	98,509	144,053	164,000	68,322	215,700	294,000

1/ The average date of the 1945 and 1950 Census was about April 1.

tractors increased from about 68,000 on January 1, 1945, to 294,000 on January 1, 1952. The census reported about 67,000 home-made tractors in 1945 but it did not report them in 1950. However, reports from crop reporters indicate that about 55,000 homemade tractors were on farms on January 1, 1952.

The Census of 1950 reported about 460,000 fewer farms than in 1945. Much of this decrease was due to the revised definition of a farm which excluded many small places classed as farms in earlier years. If the definition of a farm in 1950 had been the same as in 1945 there would have been more automobiles, motortrucks, and tractors, especially garden and home-made tractors on farms in 1950. The places not classed as farms in the 1950 Census were of the sort most likely to report home-made and garden tractors.

HORSES AND MULES

From early colonial times until about 1918, numbers of horses and mules increased along with the expansion in acreage of cropland. Although the number of farm horses and mules of all ages reached a record high level in 1918, the number of work animals (3 years old and over) was at its peak 5 years later (table 1). Along with the increased use of machine power on farms the horse and mule population on farms has continually declined since 1918. From January 1, 1942, to January 1, 1952, the number of horses and mules on farms declined 7.4 million. The reduction in numbers in these 10 years exceeded that in any previous period of similar length. It was during these years that farmers increased their total number of tractors, including garden types, by about 2.3 million.

The large reduction in numbers of horses and mules in recent years was largely due to the small colt crops. During the 10 years ended with January 1, 1952, only 3.5 million colts were raised. Since 1937 the size of the crop has declined each year and the 1951 crop (colts under one year on farms January 1, 1952) of about 120,000 head was the smallest in more than a century. It was only about 5 percent of the colt crop of 1916.

Reduction in numbers of work stock has thus far been relatively small in the Delta, the Southeast, and the Appalachian States (table 4). For the country as a whole, it is estimated that for each tractor on farms January 1, 1952, about 3.5 work animals have disappeared from farms (table 5). Displacement of work animals per farm tractor varies widely in the different State groups, depending on size of tractor, size and topography of fields, and kinds of crops grown. In the groups of States in which the number of work animals displaced per tractor is above average, tractors are of above average size. Large, level fields and the concentration of production of small grains, which usually require less tractor work per acre than row crops, are contributing factors.

Table 4.- Horses and mules on farms, all ages and colts under one year of age, by States, specified years

State and group	1920		1930		1940		1952	
	All ages	Under 1 year of age	All ages	Under 1 year of age	All ages	Under 1 year of age	All ages	Under 1 year of age
	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands
New England	305	7	202	-	139	1	61	-
New York	543	13	345	4	294	7	112	1
New Jersey	79	1	44	-	34	1	9	-
Pennsylvania	561	16	368	4	316	8	97	-
Delaware	37	1	28	-	22	1	7	-
Maryland	174	6	124	3	108	5	34	-
Northeast	1,699	44	1,111	11	913	23	320	1
Ohio	843	32	536	14	468	24	113	1
Indiana	817	47	540	14	410	24	92	1
Illinois	1,465	100	966	31	650	38	161	3
Iowa	1,469	97	1,143	44	799	50	183	4
Missouri	1,295	124	910	33	733	55	291	6
Corn Belt	5,889	400	4,095	136	3,060	191	840	15
Michigan	612	18	396	8	361	15	81	1
Wisconsin	687	24	557	12	515	22	174	2
Minnesota	943	48	822	26	651	31	188	2
Lake States	2,242	90	1,775	46	1,527	68	443	5
North Dakota	864	70	624	24	362	29	125	3
South Dakota	832	75	643	37	361	36	127	6
Nebraska	1,061	86	856	32	532	35	162	4
Kansas	1,326	127	888	38	446	35	156	4
Great Plains	4,083	358	3,011	131	1,701	135	570	17
West Virginia	184	7	129	3	110	5	82	1
Kentucky	675	42	505	11	469	24	311	5
Tennessee	671	49	505	9	466	22	337	4
Virginia	409	16	301	8	265	11	170	1
North Carolina	428	6	371	1	377	3	317	2
Appalachian	2,367	120	1,811	32	1,687	65	1,217	13
South Carolina	298	3	219	-	205	2	158	-
Georgia	507	4	387	-	355	3	223	2
Florida	86	3	63	-	59	3	52	2
Alabama	426	11	388	2	369	5	252	1
Southeast	1,317	21	1,057	2	988	13	685	5
Mississippi	523	23	460	3	460	10	339	4
Louisiana	367	14	329	5	332	10	209	4
Arkansas	575	28	494	6	436	22	243	3
Delta	1,465	65	1,283	14	1,228	42	791	11
Oklahoma	1,075	92	825	28	510	36	184	6
Texas	2,300	99	1,833	37	1,236	57	417	10
Okl.-Texas	3,375	191	2,658	65	1,746	93	601	16
Montana	678	87	470	39	252	27	124	7
Idaho	301	29	213	10	177	13	75	3
Wyoming	223	31	180	15	130	12	73	5
Colorado	452	45	368	20	235	18	106	4
New Mexico	220	18	185	11	139	9	83	3
Arizona	163	17	102	7	85	6	68	3
Utah	135	14	95	5	83	8	48	3
Nevada	63	6	43	4	38	3	27	3
Mountain	2,235	247	1,656	111	1,139	96	604	31
Washington	319	22	206	7	140	8	53	2
Oregon	286	25	192	11	145	9	57	2
California	465	23	269	8	204	11	112	4
Pacific	1,070	70	667	26	489	28	222	8
United States	25,742	1,606	19,124	574	14,478	754	6,293	122

Table 5.- Number of work animals January 1, 1920, and January 1, 1952, and the estimated number displaced per farm tractor, specified areas, January 1, 1952

State group	Work animals				Work animals displaced January 1, 1952 (excluding garden type) per tractor on farms January 1, 1952
	On farms January 1, 1920	Estimated January 1, 1952, if there were no tractors or motor vehicles 2/	On farms January 1, 1952	Tractors on farms January 1, 1952	
	Thousands	Thousands	Thousands	Thousands	Number
Northeast	1,546	1,120	313	362	2.2
Corn Belt	4,492	4,235	786	968	3.6
Lake States	1,908	2,005	428	555	2.8
Great Plains	2,865	2,950	508	498	4.9
Appalachian	1,967	1,670	1,170	298	1.7
Southeast	1,240	915	667	197	1.3
Delta	1,263	1,100	754	186	1.9
Oklahoma-Texas	2,739	2,430	543	355	5.3
Mountain	1,446	1,830	498	220	6.1
Pacific	834	995	195	237	3.4
United States	20,300	19,250	5,862	3,876	3.5

1/ Horses and mules 3 years old and over.

2/ The number of work animals shown would provide as many work animals per 100 acres of harvested crops as was the case in 1920. There were 246,000 tractors on farms on January 1, 1920, but tractors had then displaced little if any animal power as there were slightly more work animals per 100 acres of harvested crops in 1920 than in 1910.

3/ Calculated by deducting actual numbers of work stock from estimated number of work animals if there were no tractors or motor vehicles, and dividing the difference by number of tractors. Automobiles and motortrucks contributed to the displacement of work animals, but apparently tractors were largely responsible for the decline in work animals.

AUTOMOBILES

Automobiles came into wide use on farms as early as 1920. From 1910 to 1920 numbers of farm automobiles increased by more than 2 million, with a similar increase in the next decade (table 1). Since 1930 numbers of farm automobiles have changed very little (table 6). Some farmers who formerly had automobiles now rely on motortrucks, especially pick-ups, for their transportation.

MOTORTRUCKS

With the continuing decline in numbers of farm work animals, the demand for motortrucks to supply transportation on the farm and on the highways has increased.

In general, the rate of adoption of motortrucks has followed about the same trend as that of tractors. Since 1942 motortruck numbers have increased by more than 100 percent (table 1). Since 1945, numbers of motortrucks have more than doubled in most southern areas while in the Northeastern States they have gone up about 10 percent (table 7).

TRACTOR MOLDBOARD PLOWS

The moldboard plow has long been the most widely used farm implement. On January 1, 1942, an estimated 9.1 million moldboard plows of all types and sizes were on farms. Of the moldboard plows on farms in 1942, around 1,470,000, or about 16 percent, were tractor plows (table 8). Tractor moldboard plows on farms (exclusive of garden tractor plows) on January 1, 1951, were estimated at about 2.5 million, an increase of about 70 percent over the January 1, 1942, figure.

On January 1, 1942, there were about 80 tractor moldboard plows per 100 farm tractors of all types. On January 1, 1951, there were less than 70 plows per 100 farm tractors, exclusive of garden tractors. Contributing to the decline in the ratio of tractor moldboard plows to tractors is the large increase in tractor numbers in the South, where the moldboard is less widely used than elsewhere. Of the 1951 tractor moldboard plows, almost two-thirds were of the two-furrow size. Two-furrow plows accounted for more than half of all tractor moldboard plows in all State groups, except the Pacific Coast and Mountain States. About 20 percent of the tractor moldboard plows were three or more furrows in size. These plows were most important in the western half of the country. About a sixth of the tractor moldboard plows were of the one-furrow size. This size was of little importance in either the Great Plains or the Corn Belt.

It is estimated that 46 percent of the 1951 tractor moldboard plows were less than 6 years old and that only 9 percent were more than 15 years old (table 22).

Table 6.- Automobiles on farms, by States, specified years

State and group	Census					
	January 1, 1920	April 1, 1930	April 1, 1940	January 1, 1945	April 1, 1950	January 1, 1952
	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands
Maine	12.6	26.2	25.5	30.1	23.9	24.4
New Hampshire	5.3	11.1	12.9	15.0	12.1	12.3
Vermont	8.2	18.6	18.0	19.7	16.6	16.9
Massachusetts	9.3	17.6	23.7	32.9	21.4	21.8
Rhode Island	1.4	2.6	2.9	4.0	2.8	2.9
Connecticut	8.0	13.1	18.8	25.2	18.4	18.8
New York	74.8	141.9	139.7	144.9	130.0	133.0
New Jersey	13.7	22.4	24.2	27.9	28.0	28.8
Pennsylvania	76.5	152.2	158.0	165.2	151.8	156.0
Delaware	4.0	8.7	8.2	9.5	7.1	7.2
Maryland	7.7	38.0	38.8	41.5	36.4	36.9
Northeast	221.5	452.4	470.7	515.9	448.5	459.0
Ohio	128.4	201.6	231.4	221.6	208.1	213.0
Indiana	102.1	154.6	173.0	165.8	159.3	161.0
Illinois	139.1	192.9	210.5	200.9	196.2	199.0
Iowa	177.6	240.5	236.6	224.2	228.5	236.0
Missouri	86.2	176.5	176.3	165.2	162.5	168.0
Corn Belt	633.4	966.1	1,027.8	977.7	954.6	977.0
Michigan	82.4	150.9	181.2	172.7	164.8	170.0
Wisconsin	98.8	176.8	188.3	181.1	183.1	190.0
Minnesota	107.8	185.7	203.7	191.7	196.0	200.0
Lake States	289.0	513.4	578.2	545.5	543.9	560.0
North Dakota	47.7	78.8	71.9	69.2	73.7	77.0
South Dakota	58.2	81.9	72.7	68.7	77.3	81.0
Nebraska	104.5	141.1	126.3	118.6	121.2	126.0
Kansas	111.1	171.0	150.4	133.6	133.4	138.0
Plains States	321.5	472.8	421.3	390.1	405.6	422.0
West Virginia	11.1	37.0	38.0	40.5	37.3	38.0
Kentucky	30.1	86.8	98.7	103.0	119.9	123.0
Tennessee	23.5	89.0	85.2	91.4	113.8	119.0
Virginia	41.0	88.5	86.8	94.4	94.0	96.0
North Carolina	44.2	132.9	127.5	152.1	160.1	169.0
Appalachian	149.9	434.2	436.2	481.4	525.1	545.0
South Carolina	32.8	61.8	63.6	77.6	81.6	88.0
Georgia	49.8	88.5	77.0	90.1	100.6	105.0
Florida	9.4	26.4	27.4	31.7	36.1	38.0
Alabama	16.6	73.6	48.5	58.4	71.3	73.0
Southeast	108.6	250.3	216.5	257.8	289.6	304.0
Mississippi	15.9	85.6	55.7	56.9	76.3	82.0
Louisiana	10.5	43.1	34.9	40.7	56.5	61.0
Arkansas	16.4	65.9	48.6	53.9	65.2	70.0
Delta	42.8	194.6	139.2	151.5	198.0	213.0
Oklahoma	52.1	127.4	112.4	100.6	95.2	97.0
Texas	105.3	300.2	277.7	259.6	254.9	264.0
Okla.-Texas	157.4	427.6	390.1	360.2	350.1	361.0
Montana	22.1	38.2	35.7	31.6	35.1	36.5
Idaho	17.6	34.0	38.2	35.8	40.0	41.5
Wyoming	6.7	12.8	13.9	11.4	12.9	13.5
Colorado	30.8	52.3	50.4	44.5	48.8	50.5
New Mexico	6.0	15.4	15.7	15.4	15.1	15.7
Arizona	5.1	9.9	10.4	12.4	11.8	12.4
Utah	8.7	17.6	16.8	20.3	20.8	21.7
Nevada	1.7	2.9	3.2	3.0	3.1	3.2
Mountain	98.7	183.1	184.3	174.4	187.6	195.0
Washington	29.8	56.0	70.5	74.2	69.6	72.0
Oregon	22.2	47.4	58.8	59.4	61.9	64.0
California	71.5	136.8	150.5	160.2	172.1	178.0
Pacific	123.5	240.2	279.8	293.8	303.6	314.0
United States	2,146.3	4,134.7	4,144.1	4,148.3	4,206.6	4,350.0

Table 7.- Motortrucks on farms, by States, specified years

State and group	Census						: Estimated : January 1, : 1952
	: January 1, : 1920	: April 1, : 1930	: April 1, : 1940	: January 1, : 1945	: April 1, : 1950	: January 1, : 1952	
	: Thousands	: Thousands	: Thousands	: Thousands	: Thousands	: Thousands	
Maine	1.1	10.8	13.1	17.8	19.2	20.2	
New Hampshire	.7	4.5	6.5	9.2	8.9	9.5	
Vermont	.6	5.0	6.2	9.6	10.6	11.2	
Massachusetts	3.5	9.6	12.4	18.8	15.4	16.2	
Rhode Island	.5	1.7	2.0	3.1	2.4	2.5	
Connecticut	1.6	6.3	11.0	15.7	13.2	14.0	
New York	9.3	59.0	55.3	69.1	72.5	77.0	
New Jersey	3.4	14.7	17.1	23.2	24.3	26.0	
Pennsylvania	9.4	47.1	44.3	56.3	66.1	69.0	
Delaware	.3	3.0	2.6	3.8	4.1	4.4	
Maryland	2.8	11.3	13.0	19.2	21.4	23.0	
Northeast	33.2	173.0	183.5	245.8	258.1	273.0	
Ohio	7.3	39.2	35.2	42.8	64.8	69.0	
Indiana	3.7	30.0	29.7	38.4	59.8	64.0	
Illinois	6.2	40.4	42.5	56.6	86.8	94.0	
Iowa	8.9	32.7	26.3	37.4	62.6	70.0	
Missouri	5.1	20.1	31.8	47.2	77.4	88.0	
Corn Belt	31.2	162.4	165.5	222.4	351.4	385.0	
Michigan	4.9	36.8	33.1	41.3	57.0	63.0	
Wisconsin	4.0	51.8	50.9	61.0	74.5	82.0	
Minnesota	3.8	36.6	8.6	47.4	70.5	78.0	
Lake States	12.7	125.2	122.6	149.7	202.0	223.0	
North Dakota	.8	17.0	21.5	36.7	55.6	60.0	
South Dakota	4.4	14.8	14.3	22.2	37.8	42.0	
Nebraska	6.6	26.0	24.1	33.8	54.4	60.0	
Kansas	3.9	33.7	42.6	60.9	89.3	96.0	
Plains States	15.7	91.5	102.5	153.6	237.1	258.0	
West Virginia	.9	7.4	12.4	16.3	24.6	27.0	
Kentucky	1.5	7.2	19.1	27.2	55.0	60.0	
Tennessee	1.4	9.0	18.9	26.3	60.2	66.0	
Virginia	2.5	19.5	23.3	32.0	49.1	54.0	
North Carolina	2.7	18.6	20.6	32.9	60.4	75.0	
Appalachian	9.0	61.7	94.3	134.7	249.3	282.0	
South Carolina	1.7	7.0	8.2	15.3	29.7	33.0	
Georgia	3.1	16.0	21.7	34.7	63.0	70.0	
Florida	1.6	12.2	14.4	21.6	29.3	32.0	
Alabama	1.2	12.8	15.3	23.9	52.8	57.0	
Southeast	7.6	48.0	59.6	95.5	174.8	192.0	
Mississippi	1.0	16.5	18.6	28.3	56.2	63.0	
Louisiana	.9	9.3	17.0	21.0	36.4	41.0	
Arkansas	1.0	11.0	19.7	33.1	63.6	68.0	
Delta States	2.9	36.8	55.3	82.4	156.2	172.0	
Oklahoma	2.2	23.9	28.4	44.4	68.9	73.0	
Texas	5.4	52.6	56.7	89.3	147.1	160.0	
Okla.-Texas	7.6	76.5	85.1	133.7	216.0	233.0	
Montana	1.2	14.6	21.0	29.4	38.8	42.0	
Idaho	.8	6.3	12.0	19.1	29.7	32.0	
Wyoming	.6	4.1	6.3	8.9	12.6	13.5	
Colorado	3.0	16.9	16.9	28.8	42.7	46.0	
New Mexico	.6	5.3	7.1	11.9	15.1	17.0	
Arizona	.6	3.1	4.3	6.9	8.6	9.5	
Utah	.6	4.2	6.3	11.0	15.3	16.7	
Nevada	.2	1.2	1.7	2.6	3.1	3.3	
Mountain	7.6	55.7	75.6	118.6	165.9	180.0	
Washington	3.4	18.8	28.2	40.0	48.2	52.0	
Oregon	1.8	9.7	16.8	28.1	39.5	43.0	
California	6.4	41.0	58.0	85.7	110.7	117.0	
Pacific	11.6	69.5	103.0	153.8	198.4	212.0	
United States	139.1	900.3	1,047.0	1,490.2	2,209.2	2,410.0	

Table 8.- Tractor moldboard plows and tractor listers and middlebusters on farms, January 1, 1942 and January 1, 1951, by States and 1951 distribution by size, by State groups

State and group	Tractor moldboard plows					Tractor listers and middlebusters				
	January 1, 1951					January 1, 1951				
	Percentage distribution:					Percentage distribution:				
	by size					by size				
January 1, 1942	Total	1 furrow	2 furrow	3 or more furrow	January 1, 1942	Total	1 row	2 row	3 or more row	
Number	Number	Percent	Percent	Percent	Number	Number	Percent	Percent	Percent	
New England	30,900	39,000				--	--			
New York	63,000	90,000				--	400			
New Jersey	13,300	18,000				200	300			
Pennsylvania	58,000	102,000				--	900			
Delaware	3,500	5,000				10	100			
Maryland	12,700	25,000				100	300			
Northeast	181,400	279,000	26	69	5	310	2,000	50	50	--
Ohio	98,000	140,000				100	500			
Indiana	80,500	127,000				100	500			
Illinois	140,000	185,000				200	2,000			
Iowa	141,000	195,000				5,000	12,000			
Missouri	48,000	105,000				8,000	13,000			
Corn Belt	507,500	752,000	8	73	19	13,400	28,000	16	71	13
Michigan	75,000	118,000				--	500			
Wisconsin	89,000	141,000				100	500			
Minnesota	120,000	178,000				300	1,000			
Lake States	284,000	437,000	17	69	14	400	2,000	40	60	--
North Dakota	50,000	75,000				1,000	2,000			
South Dakota	43,000	73,000				8,000	10,000			
Nebraska	68,000	95,000				45,000	63,000			
Kansas	75,000	110,000				53,000	65,000			
Great Plains	236,000	353,000	3	52	45	107,000	140,000	4	82	14
West Virginia	3,000	11,000				100	100			
Kentucky	10,000	51,000				200	900			
Tennessee	8,300	30,000				400	7,000			
Virginia	9,500	38,000				500	2,000			
North Carolina	4,800	40,000				300	14,000			
Appalachian	35,600	170,000	34	62	4	1,500	24,000	40	57	3
South Carolina	1,200	6,000				400	4,000			
Georgia	2,600	17,000				900	14,000			
Florida	4,000	9,000				1,000	4,000			
Alabama	3,500	15,000				700	5,000			
Southeast	11,300	47,000	35	59	6	3,000	27,000	39	59	2
Mississippi	2,800	20,000				5,000	19,000			
Louisiana	5,500	11,000				6,000	18,000			
Arkansas	8,500	33,000				4,000	17,000			
Delta	16,800	64,000	22	60	18	15,000	54,000	25	55	20
Oklahoma	35,000	68,000				27,000	35,000			
Texas	30,000	64,000				100,000	165,000			
Okla.-Texas	65,000	132,000	17	59	24	127,000	200,000	10	63	27
Montana	20,900	26,000				700	900			
Idaho	11,000	32,000				800	1,500			
Wyoming	6,300	13,000				1,200	2,000			
Colorado	17,000	30,000				8,500	11,000			
New Mexico	2,400	9,000				5,400	8,000			
Arizona	1,600	3,000				1,000	1,000			
Utah	2,500	13,500				100	400			
Nevada	870	2,500				--	200			
Mountain	62,570	129,000	34	41	25	17,700	25,000	6	54	40
Washington	15,000	35,000				500	500			
Oregon	15,000	36,000				200	500			
California	38,400	59,000				6,000	10,000			
Pacific	68,400	130,000	24	41	35	6,700	11,000	20	30	50
United States	1,468,570	2,493,000	16.2	63.4	20.4	292,010	513,000	13.6	66.1	20.3

TRACTOR LISTERS AND MIDDLEBUSTERS

These implements are known as listers in most of the subhumid areas where they are often equipped with planting attachments for the seeding of row crops. In the more humid Southern and Eastern areas, these implements are generally called middlebusters or bedders.

More than a half million tractor listers and tractor middlebusters were estimated to be on farms on January 1, 1951, and less than 300,000 on January 1, 1942 (table 8). Of the 1951 listers and middlebusters, about two-thirds were of the two-row size and about 20 percent were of the three-row size and larger. Although some listers and middlebusters were reported in each State group, around two-thirds of them were in the Great Plains States and in Oklahoma and Texas.

Of the 1951 listers and middlebusters, 48 percent were less than 6 years old; only 4 percent were more than 20 years old (table 22).

TRACTOR DISK PLOWS

An analysis of the reports received from crop correspondents, together with sales figures of the industry division of the Bureau of the Census, indicate that, about 326,000 disk plows were on farms on January 1, 1951 (table 9). Sales of disk plows have increased substantially in recent years. More than 60 percent of these plows were less than 6 years old on January 1, 1951 (table 22). Disk plows are used principally in the South. About half of the tractor disk plows on farms January 1, 1951 were of the two-disk size and more than one-third had three or more disks.

TRACTOR ONE-WAY PLOWS

The one-way disk plow is also known as the disk tiller, the wheat-land plow, the cylinder plow, the harrow plow, and perhaps by other names. The disks on these implements are larger than those on the ordinary disk harrow and are smaller than the disks of the disk plow. The disks of the one-way are attached to one axle, set at the same angle, and cut the same way. Of the 250,000 one-ways estimated to be on farms January 1, 1951, more than 60 percent were in the Great Plains States and in Oklahoma and Texas (table 9). These State groups, together with the Mountain and Pacific Coast States, had nearly all of the large one-ways. Small sizes generally prevail in the more humid Southern and Eastern areas.

Sales of one-ways have been fairly large in recent years (table 23). About 45 percent of the one-ways on farms January 1, 1951 were less than 6 years old. About 7 percent were more than 20 years old (table 22).

GRAIN COMBINES

The first grain combine or combine harvester-thresher was developed almost a century ago. At the turn of the twentieth century all of the combines were in the Pacific Coast States. Early combines were large, operated by traction power, and drawn by large teams or by steam tractors.

Table 9.- Number and percentage distribution by size, of tractor disk plows and tractor one-ways on farms, specified areas, January 1, 1951 ^{1/}

State group	Disk plows				One-ways				
	Total	Percentage distribution by size			Total	Percentage distribution by size			
		1	2	3 or more		Under 3 feet	3-4.9 feet	5-9.9 feet	10 feet and more
Thousands	Percent	Percent	Percent	Thousands	Percent	Percent	Percent		
Northeast	11	22	55	23	1	35	53	12	--
Corn Belt	24	31	51	18	5	23	32	40	5
Lake States	11	25	53	22	2	18	32	40	10
Great Plains	14	17	29	54	69	--	10	48	42
Appalachian	59	13	67	20	10	33	62	5	--
Southeast	65	10	57	33	22	40	55	5	--
Delta	43	16	51	33	7	25	60	15	--
Oklahoma-Texas	64	7	44	49	86	3	15	45	37
Mountain	14	11	26	63	32	1	12	44	43
Pacific	21	11	29	60	16	--	10	60	30
United States	326	14	50	36	250	7.5	20.2	40.4	31.9

^{1/} Estimated.

It was during World War I that the combine method of harvesting small grains first came into use in the Mountain and Great Plains States. Smaller combines had then been developed and were equipped with mounted motors and adapted for use with tractors having internal combustion engines.

In 1920, it was estimated that there were only 4,000 combines on farms (table 1). Practically all of the early combines were large and some cut a swath of more than 30 feet.

Sales of combines have been large in recent years (table 23). Numbers on farms on January 1, 1952, were more than double the 1945 Census figure. Of the 1951 combines, about 8 percent were self-propelled, about 52 percent were pull-type combines with mounted motors, and about 40 percent were pull-type power take-off combines (table 10).

Of the total combines on farms January 1, 1951, more than half were less than 6 years old and around 4 percent were over 20 years old. (table 22). More than half of the combines with mounted motors were less than 6 years of age. A higher percentage of these combines were more than 20 years old on January 1, 1951, than was the case for other types. Self-propelled combines are of recent development and more than 90 percent of them were less than 6 years old.

Of the power take-off combines on farms January 1, 1951, about 80 percent were less than 11 years old, with only 1 percent more than 20 years old.

Size of combines varies with the type of combine and by different sections of the country. Most of the large combines are found in the sub-humid areas where farms and acreages of small grains are large.

For all combines, on farms on January 1, 1951, about 69 percent were 6 feet or less in size and about 24 percent were 10 feet or more in size (table 11). Combines on farms in 1951 were smaller than those in 1942. In the earlier year more than 40 percent of the combines were 10 feet or more in size.

More than 95 percent of the power take-off combines in 1951 were 6 feet or less in size. Combines with mounted motors were reported in all size groups, with the 6-foot and 12-foot size groups together accounting for about 65 percent of the total.

Only about 6 percent of the self-propelled combines were less than 10 feet in size. The 12-foot and the 14-foot size groups together accounted for more than 75 percent of the 1951 self-propelled combines.

GRAIN BINDERS

Grain binders with twine tie attachments were first sold to farmers around 1878. Production of binders increased rapidly and the binder soon became the leading machine for harvesting small-grain crops. Although definite figures are not available, shipment figures of domestic manufacturers compiled by the Bureau of the Census indicate that numbers of binders on farms were at about a peak in 1930.

Table 10.- Combines on farms, by States, specified years and distribution by type, 1951

State and group	1951							1952 January 1 estimate
	1945	1950	Percentage distribution			1952		
	January 1 Census Number	April 1 Census Number	January 1 estimate Number	Power take-off Percent	Mounted motor Percent	Self- propelled Percent	January 1 estimate Number	
Maine	458	540	575	65.0	35.0	-	600	
New Hampshire	226	83	90	66.0	34.0	-	110	
Vermont	457	309	325	65.0	35.0	-	350	
Massachusetts	290	144	150	65.0	35.0	-	170	
Rhode Island	8	37	40	65.0	35.0	-	40	
Connecticut	232	113	120	65.0	35.0	-	130	
New York	5,853	10,834	12,400	40.0	58.0	2.0	13,500	
New Jersey	875	2,009	2,350	46.0	52.0	2.0	2,500	
Pennsylvania	7,436	14,543	16,800	45.0	52.0	3.0	18,800	
Delaware	472	1,142	1,350	41.0	56.0	3.0	1,500	
Maryland	1,465	4,031	4,800	45.0	52.0	3.0	5,300	
Northeast	17,772	33,785	39,000	44.0	53.5	2.5	43,000	
Ohio	19,545	40,310	46,000	54.0	43.0	3.0	50,000	
Indiana	17,720	37,907	44,000	57.0	39.5	3.5	49,000	
Illinois	38,470	71,973	82,000	53.0	41.5	5.5	90,000	
Iowa	23,678	52,281	61,000	52.0	43.5	4.5	69,000	
Missouri	11,127	27,781	33,000	60.0	37.7	2.3	37,000	
Corn Belt	110,540	230,252	266,000	54.5	41.4	4.1	295,000	
Michigan	12,920	27,284	31,000	59.0	39.3	1.7	34,000	
Wisconsin	8,872	14,946	17,000	41.5	55.0	3.5	19,000	
Minnesota	16,021	31,281	36,000	16.0	73.5	10.5	41,000	
Lake States	37,813	73,511	84,000	37.0	57.2	5.8	94,000	
North Dakota	23,261	38,191	42,000	7.0	78.0	15.0	45,000	
South Dakota	10,831	21,827	25,000	13.0	78.0	9.0	27,000	
Nebraska	20,591	37,078	42,000	37.0	54.0	9.0	46,000	
Kansas	48,067	68,906	73,000	29.0	57.5	13.5	76,000	
Great Plains	102,750	166,002	182,000	23.6	64.2	12.2	194,000	
West Virginia	331	626	800	57.0	43.0	-	1,000	
Kentucky	2,422	7,053	8,500	52.5	45.0	2.5	10,000	
Tennessee	2,969	10,194	12,400	63.0	36.0	1.0	14,000	
Virginia	3,044	6,393	7,500	54.0	43.0	3.0	9,000	
North Carolina	4,934	13,252	15,800	70.0	29.5	.5	18,000	
Appalachian	13,700	37,518	45,000	61.9	36.7	1.4	52,000	
South Carolina	2,022	6,760	8,200	63.5	35.0	1.5	9,400	
Georgia	3,629	8,394	10,000	67.0	32.0	1.0	11,000	
Florida	242	513	600	90.0	10.0	.0	600	
Alabama	2,148	4,532	5,200	58.0	40.0	2.0	7,000	
Southeast	8,041	20,199	24,000	64.4	34.2	1.4	28,000	
Mississippi	2,953	5,994	6,800	53.0	32.0	15.0	7,500	
Louisiana	1,675	3,505	4,000	38.0	35.0	27.0	4,500	
Arkansas	3,410	7,967	9,200	46.0	38.0	16.0	10,000	
Delta	8,038	17,466	20,000	46.8	35.4	17.8	22,000	
Oklahoma	15,976	25,022	27,000	33.5	55.0	11.5	28,000	
Texas	15,656	35,145	39,000	47.0	44.0	9.0	40,000	
Oklahoma-Texas	31,632	60,167	66,000	41.5	48.5	10.0	68,000	
Montana	10,708	15,549	17,000	12.0	72.0	16.0	18,300	
Idaho	5,179	10,446	12,000	12.0	73.0	15.0	13,300	
Wyoming	2,089	3,209	3,500	20.0	73.0	7.0	3,700	
Colorado	7,188	12,919	14,500	24.0	62.0	14.0	15,800	
New Mexico	1,721	2,971	3,300	26.0	62.0	12.0	3,500	
Arizona	352	781	900	18.0	52.0	30.0	1,000	
Utah	937	2,827	3,400	14.0	72.0	14.0	3,900	
Nevada	154	385	400	47.0	43.0	10.0	500	
Mountain	28,328	49,087	55,000	17.0	68.5	14.5	60,000	
Washington	5,881	7,851	8,400	6.0	83.0	11.0	8,800	
Oregon	5,761	9,643	10,600	9.0	77.0	14.0	11,200	
California	4,529	8,819	10,000	5.0	68.0	27.0	11,000	
Pacific	16,171	26,313	29,000	6.8	75.6	17.6	31,000	
United States	374,785	714,300	810,000	40.4	51.8	7.8	887,000	

Table 11.- Number and percentage distribution of grain combines on farms by type and size, specified areas, January 1, 1951 and January 1, 1942

State group	Thousands	Combines of specified sizes										Other sizes of combines									
		4 feet and less		5 feet		6 feet		10 feet		12 feet		14 feet		16 feet		More than 16 feet		Under 10 feet		Over 10 feet	
		Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent
<u>Combines all types, January 1, 1951</u>																					
Northeast	39	9.2	34.6	43.8	0.9	1.3	0.1											3.8	6.3		
Corn Belt	266	5.3	31.3	45.6	2.0	3.3	.1											2.6	9.6	.1	
Lake States	84	7.0	26.5	45.7	1.8	3.0	.3											4.0	6.0		
Plains States	182	1.1	15.3	24.3	4.1	36.0	4.5											1.1	7.6	2.2	
Appalachian	45	13.9	36.7	36.2	1.0	2.3												6.5	3.4		
Southeast	24	15.2	40.0	32.2		.9												7.5	3.4		
Delta	20	9.4	21.1	38.5	2.9	14.8	1.0											4.3	8.0		
Oklahoma-Texas	66	4.2	23.0	26.6	2.0	27.2	4.6											1.5	4.9	2.9	
Mountain	55	3.6	14.6	27.5	3.9	39.1	5.6											1.3	4.3	5.6	
Pacific	29	2.8	9.9	16.4	2.5	16.6	12.5											1.0	3.3	19.9	
United States:	810	5.3	25.1	35.8	2.5	15.4	2.3											2.6	7.1	1.9	
<u>Combines, power take-off, January 1, 1951</u>																					
United States:	328	11.9	46.1	33.4	.4													3.4	4.8		
<u>Combines, mounted motors, January 1, 1951</u>																					
United States:	419	.9	12.4	43.0	3.0	21.7	1.0											2.4	9.1	3.4	
<u>Combines, self-propelled, January 1, 1951</u>																					
United States:	63	--	--	--	11.5	54.3	22.9											--	5.4	1.2	
<u>Combines, all types, January 1, 1942</u>																					
United States:	264	7.4	21.7	20.0	4.9	22.6	1.6											2.1	6.2	6.8	

Although the combine has now become the major harvest machine, it is estimated that there were 875,000 grain binders on farms January 1, 1951. Some binders were reported in each State, but the Lake States, the Plains States, and Iowa and Missouri together had about 60 percent of the binders (table 15).

Sales of binders have been of small volume in recent years and more than a half million of them disappeared from farms since January 1, 1942. Reflecting the small sales of recent years, only 7 percent of the binders in 1951 were less than 6 years old. Almost as many were more than 40 years old (table 13). The leading binders in both 1951 and 1942 were the 8-foot, 6-foot and 7-foot sizes, respectively. The three sizes together accounted for more than 75 percent of the grain binders (table 12).

ROW-CROP BINDERS

Row-crop binders are used principally for harvesting corn and sorghum. Their development closely followed that of the grain binder. These binders were first used on farms around 1893.

Row-crop binders, like grain binders, are decreasing in numbers and in use. Corn pickers are now used extensively for harvesting corn from the standing stalk in some areas where in earlier times much of the acreage was cut and shocked. Also in earlier years most of the corn and sorghum harvested for silage was cut with row-crop binders. Use of row-crop binders for harvesting these silage crops has decreased because of the increased use of field forage harvesters. On January 1, 1942, it was estimated that there were 609,000 row-crop binders on farms. Only 386,000 of these binders were estimated to be on farms on January 1, 1951. This is about 37 percent below the 1942 figure (table 15).

CORN PICKERS

Field-type mechanical corn pickers were used but little before World War I. At that time interest in the mechanical harvesting of corn was increasing. By 1920 it was estimated that there were 10,000 pickers on farms (table 1). The first pickers were one-row size and operated by traction power. The early pickers were drawn either by horses or by tractors. In 1928, the tractor power take-off corn picker was developed. It was at about that time that the two-row picker first came into use.

From 1920 to 1930 the number of corn pickers increased by about 400 percent and in the next decade it more than doubled. From 1942 to 1952 the number of pickers increased from 130,000 to 588,000, an increase of more than 350 percent.

Corn pickers are reported in every State but the five Corn Belt States, and Minnesota, Nebraska, and South Dakota together had more than 80 percent of the pickers in 1952 (table 14).

With the increase in number of pickers in the last decade, the tendency has been toward the one-row picker. About 57 percent of the January 1, 1951, numbers were one-row pickers. Only 43 percent of the pickers on farms in 1942 were of this size. In 1951 only Iowa and Illinois had more two-row than one-row pickers.

Table 12.- Number and percentage distribution of grain binders, by size, January 1, 1942 and January 1, 1951

State group	Number	Average size	Percentage distribution by size						All other sizes
			5 - foot	6 - foot	7 - foot	8 - foot	10 - foot	Per-	
	Thou-	Feet	Per-	Per-	Per-	Per-	Per-	Per-	
	sands		cent	cent	cent	cent	cent	cent	
			<u>January 1, 1951</u>						
Northeast	85	6.7	8	41	26	19	4	2	
Corn Belt	218	7.8	1	13	21	46	18	1	
Lake States	230	7.0	5	39	22	25	7	2	
Great Plains	163	8.5	-	2	15	43	39	1	
Appalachian	56	7.0	4	30	35	21	8	2	
Southeast	10	6.8	17	45	10	11	16	1	
Delta	11	7.1	7	22	28	36	4	3	
Oklahoma-Texas	54	8.5	1	5	19	30	43	2	
Mountain	36	7.8	4	21	20	30	23	2	
Pacific	12	7.3	4	32	22	18	18	6	
United States	875	7.6	3.2	22.2	21.3	33.1	18.6	1.6	
			<u>January 1, 1942</u>						
United States	1,385	7.4	3.3	27.6	24.9	31.7	12.0	.5	

Table 13.- Number and percentage distribution by age, of grain binders on farms, specified areas, January 1, 1951

State group	Percentage distribution by age							
	Number	5 years and under	6 - 10 years	11 - 15 years	16 - 20 years	21 - 30 years	31 - 40 years	41 years and over
	Thou- sands	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent
Northeast	85	5	13	19	21	23	11	8
Corn Belt	218	3	10	24	21	24	12	6
Lake States	230	9	11	21	18	24	10	7
Plains	163	8	12	21	19	29	7	4
Appalachian	56	10	14	15	19	27	9	6
Southeast	10	17	16	39	9	13	3	3
Delta	11	11	24	23	14	19	6	3
Oklahoma-Texas	54	8	15	29	17	20	8	3
Mountain	36	11	12	18	22	25	6	6
Pacific	12	10	9	21	28	17	6	9
United States	875	7.1	11.8	21.8	19.4	24.5	9.5	5.9

Table 14.- Field-type mechanical corn pickers on farms by States, specified years, and distribution by size, 1951

State and group	1942	1950	1951		1952	
	January 1	April 1	January 1	Percentage distribution		January 1,
	estimated	Census	estimated	One-row	Two-row	estimated
	Number	Number	Number	Percent	Percent	Number
Maine	-	13	15	-	-	20
New Hampshire	-	17	20	-	-	20
Vermont	-	24	30	-	-	30
Massachusetts	-	48	50	-	-	60
Rhode Island	-	6	10	-	-	10
Connecticut	-	49	50	-	-	60
New York	100	1,822	2,250	-	-	2,700
New Jersey	200	1,057	1,275	-	-	1,500
Pennsylvania	600	8,163	10,150	-	-	12,500
Delaware	20	649	850	-	-	1,000
Maryland	85	2,570	3,300	-	-	4,100
Northeast	1,005	14,418	18,000	79.0	21.0	22,000
Ohio	9,200	34,684	40,000	71	29	45,000
Indiana	11,900	45,299	52,000	61	39	58,000
Illinois	32,100	75,556	84,000	40	60	92,000
Iowa	37,000	92,504	103,000	40	60	111,000
Missouri	1,800	17,291	21,000	77	23	26,000
Corn Belt	92,000	265,334	300,000	50.0	50.0	332,000
Michigan	1,800	10,716	12,000	81	19	14,000
Wisconsin	2,700	10,154	12,000	83	17	13,000
Minnesota	18,000	45,811	51,000	63	37	57,000
Lake States	22,500	66,681	75,000	69.0	31.0	84,000
North Dakota	1,100	5,539	6,500	62	38	7,500
South Dakota	6,800	26,178	31,000	56	44	36,000
Nebraska	4,100	42,025	48,000	50	50	54,000
Kansas	1,000	12,232	14,500	82	18	16,500
Great Plains	13,000	85,974	100,000	57.0	43.0	114,000
West Virginia	10	394	500	-	-	600
Kentucky	200	4,980	6,300	-	-	7,400
Tennessee	360	1,824	2,200	-	-	3,000
Virginia	40	2,433	3,100	-	-	4,000
North Carolina	30	1,937	2,400	-	-	3,000
Appalachian	640	11,568	14,500	77.0	23.0	18,000
South Carolina	5	380	500	-	-	700
Georgia	40	688	1,000	-	-	1,400
Florida	-	93	100	-	-	200
Alabama	40	695	900	-	-	1,300
Southeast	85	1,856	2,500	86.0	14.0	3,600
Mississippi	20	778	1,000	70	30	1,200
Louisiana	-	284	400	90	10	500
Arkansas	20	864	1,100	75	25	1,300
Delta	40	1,926	2,500	75.0	25.0	3,000
Oklahoma	100	1,606	1,950	80	20	2,500
Texas	200	2,943	3,650	75	25	4,500
Oklahoma-Texas	300	4,549	5,600	77.0	23.0	7,000
Montana	145	274	320	-	-	350
Idaho	10	134	160	-	-	180
Wyoming	25	76	100	-	-	130
Colorado	180	2,309	2,500	-	-	2,800
New Mexico	-	129	150	-	-	170
Arizona	-	10	10	-	-	10
Utah	-	31	50	-	-	50
Nevada	-	9	10	-	-	10
Mountain	360	2,972	3,300	73.0	27.0	3,700
Washington	-	76	100	-	-	100
Oregon	25	172	200	-	-	250
California	75	264	300	-	-	350
Pacific	100	512	600	78.0	22.0	700
United States	130,030	455,790	522,000	57.0	43.0	588,000

Table 15.- Estimated number of specified machines on farms, by States, January 1, 1951

State and group	Grain binders	Row-crop binders 1/	Power elevators	Hammer	Power sprayers	Power dusters
	Number	Number	Number	Number	Number	Number
Maine	2,000	1,500	300	250	2,700	1,200
New Hampshire	150	500	150	50	400	100
Vermont	1,000	2,500	300	150	800	100
Massachusetts	300	1,500	200	200	3,500	700
Rhode Island	25	400	50	50	400	200
Connecticut	125	1,100	200	400	500	100
New York	26,000	25,000	7,200	6,000	15,000	6,500
New Jersey	1,500	2,500	2,000	1,500	3,000	2,000
Pennsylvania	45,000	19,000	9,600	19,000	18,000	2,200
Delaware	900	100	500	400	700	200
Maryland	8,000	2,400	2,500	6,000	3,000	700
Northeast	85,000	56,500	23,000	34,000	48,000	14,000
Ohio	45,000	25,000	27,000	25,000	17,000	1,000
Indiana	21,000	10,000	30,000	31,000	15,000	600
Illinois	38,000	12,000	61,000	54,000	20,000	700
Iowa	70,000	21,000	80,000	62,000	40,000	500
Missouri	44,000	9,000	15,000	34,000	12,000	200
Corn Belt	218,000	77,000	213,000	206,000	104,000	3,000
Michigan	47,000	31,000	14,000	15,000	17,000	2,000
Wisconsin	88,000	55,000	15,000	26,000	13,000	800
Minnesota	95,000	53,000	46,000	48,000	23,000	1,200
Lake States	230,000	139,000	75,000	89,000	53,000	4,000
North Dakota	40,000	13,000	28,000	20,000	13,000	1,200
South Dakota	37,000	12,000	24,000	19,000	13,000	200
Nebraska	48,000	15,000	36,000	45,000	13,000	400
Kansas	38,000	23,000	25,000	40,000	14,000	200
Great Plains	163,000	63,000	113,000	124,000	53,000	2,000
West Virginia	5,000	500	500	2,000	1,500	100
Kentucky	13,000	2,000	2,500	14,000	4,500	400
Tennessee	13,000	2,500	1,000	16,000	3,000	600
Virginia	16,000	3,500	2,000	13,000	4,600	700
North Carolina	9,000	2,000	1,000	11,000	5,400	6,200
Appalachian	56,000	10,500	7,000	56,000	19,000	8,000
South Carolina	4,950	800	300	5,000	3,800	5,500
Georgia	4,000	1,000	900	12,000	3,400	11,000
Florida	50	100	300	1,000	4,000	2,000
Alabama	1,000	600	500	7,000	1,800	7,500
Southeast	10,000	2,500	2,000	25,000	13,000	26,000
Mississippi	1,000	900	700	9,000	5,200	4,200
Louisiana	3,000	500	400	6,000	2,400	2,500
Arkansas	7,000	800	900	10,000	4,400	6,300
Delta	11,000	2,200	2,000	25,000	12,000	13,000
Oklahoma	24,000	6,000	6,000	30,000	5,000	2,000
Texas	30,000	21,000	9,000	55,000	21,000	14,000
Oklahoma-Texas	54,000	27,000	15,000	85,000	26,000	16,000
Montana	10,000	1,100	7,500	5,000	6,000	300
Idaho	6,500	200	3,100	4,000	4,500	1,600
Wyoming	4,000	300	700	3,000	1,500	1,000
Colorado	11,300	2,600	7,000	11,000	8,700	1,800
New Mexico	1,500	2,400	500	5,000	2,500	200
Arizona	100	100	100	1,200	1,500	400
Utah	2,500	500	700	1,500	2,000	600
Nevada	100	100	400	300	300	100
Mountain	36,000	7,300	20,000	31,000	27,000	6,000
Washington	7,500	400	2,000	3,000	8,500	2,000
Oregon	3,500	300	3,000	4,500	11,000	4,000
California	1,000	300	4,000	6,500	32,500	12,000
Pacific	12,000	1,000	9,000	14,000	52,000	18,000
United States	875,000	386,000	479,000	689,000	407,000	110,000

1/ It was estimated that there were 609,000 row binders on farms January 1, 1942. See BAE Report, F.M. 46, "Number and Duty of Principal Farm Machines."

Sales of mechanical corn pickers have been exceptionally large in recent years (table 23). More than two-thirds of the pickers on farms January 1, 1951, were less than 6 years of age. Only one percent was more than 20 years old (table 22).

BALERS

It is almost a century since the first baler, or hay press, was manufactured. Until 20 years ago, practically all of the baling of hay and straw was done with stationary balers. Much of the baling at that time was from barns and stacks, but some hay was baled at haying time with stationary balers. When this was done it was necessary to haul or transport the hay to the baler.

During the last 20 years there have been many changes in types of balers. The hand-tie pick-up baler first came into use around 1930. Many stationary balers sold in the last 20 years were designed so that they could be readily transported and could be used for baling from the shock. Around 1940 the first automatic twine-tie baler came into use and about 5 years later automatic wire-tie balers were first sold. Automatic balers can be operated with less labor and much less physical effort than the old hand-tie balers.

It is estimated that there were about 240,000 pick-up balers on farms on January 1, 1951 compared with about 25,000 pick-up balers on January 1, 1942. About 58 percent of the pick-up balers in 1951 was twine balers (table 16). All of the twine balers and many of the wire pick-up balers in 1951 were automatic tie balers. Practically all of the pick-up balers in 1942 were hand-tie balers.

Most of the windrow pick-up balers on farms in 1951 were purchased in recent years (table 23). In 1951 almost 80 percent of them were less than 6 years old and only around 4 percent were more than 10 years old (table 22). Along with the increased demand for windrow pick-up balers annual sales of stationary balers have continuously declined. Purchases of stationary balers have been small in recent years. There were about 40,000 fewer stationary balers on farms January 1, 1951, than in 1942 (table 16). Many of the balers that disappeared from farms during the last decade were designed for use with animal power. Most of the stationary balers now on farms are in the South. They are used mainly in the commercial peanut areas.

Of the stationary balers in 1951 more than 30 percent were more than 20 years old (table 22). Some of the balers were more than 40 years old. Many of the stationary balers on farms in 1951 were not used in 1950.

FIELD FORAGE HARVESTERS

Field ensilage harvesters first came into use around 1920. The early machines were adapted only for harvesting and chopping corn and sorghum for silage. A marked expansion in the use of field forage harvesters has taken place in the last decade with the development of new types of forage harvesters. The new machines have attachments for row crops and pick-up attachments for handling grass silage, cured hay, and

Table 16.- Balers on farms, by type, and by States, specified years

State and group	Windrow pickup balers					Stationary balers	
	1942	1950	1951		1942	1951	
	January 1	April 1	January 1	Percentage distribution	January 1	January 1	
	estimated	Census	estimated	Wire	Twine	estimated	estimated
	Number	Number	Number	Percent	Percent	Number	Number
Maine	20	524	650			50	30
New Hampshire	10	292	350			75	40
Vermont	30	837	1,040			100	50
Massachusetts	10	700	870			65	30
Rhode Island	0	74	100			25	10
Connecticut	10	688	870			25	15
New York	350	9,221	11,600			1,500	900
New Jersey	340	1,799	2,180			350	300
Pennsylvania	430	9,241	11,600			1,900	1,600
Delaware	50	405	480			100	75
Maryland	250	2,194	2,660			265	150
Northeast	1,500	25,975	32,400	21	79	4,455	3,200
Ohio	1,400	12,438	15,300			2,300	1,500
Indiana	1,300	9,679	11,800			2,000	1,000
Illinois	2,300	15,762	19,200			2,700	1,200
Iowa	2,100	13,192	16,000			2,200	1,300
Missouri	1,400	9,047	10,800			7,900	4,000
Corn Belt	8,500	60,118	73,100	35	65	17,100	9,000
Michigan	900	7,480	9,200			1,250	1,000
Wisconsin	1,000	8,339	10,200			550	500
Minnesota	600	7,817	9,700			900	1,000
Lake States	2,500	23,636	29,100	36	64	2,700	2,500
North Dakota	200	2,404	3,000			300	2,400
South Dakota	100	3,000	3,800			300	300
Nebraska	300	4,274	5,300			1,500	1,200
Kansas	700	8,160	10,200			2,900	3,000
Great Plains	1,300	17,838	22,300	44	56	5,000	6,900
West Virginia	100	618	750			900	600
Kentucky	700	5,979	7,350			10,300	5,200
Tennessee	370	4,795	6,000			12,750	5,200
Virginia	250	3,557	4,450			1,300	1,900
North Carolina	400	5,797	7,250			6,000	6,500
Appalachian	1,820	20,746	25,800	48	52	31,250	19,400
South Carolina	125	2,205	2,800			2,250	4,000
Georgia	250	3,802	4,800			6,800	8,400
Florida	25	310	400			750	600
Alabama	300	2,446	3,000			9,000	5,000
Southeast	700	8,763	11,000	57	43	18,800	18,000
Mississippi	400	3,294	4,050			5,200	4,000
Louisiana	200	1,956	2,400			5,000	2,500
Arkansas	400	3,317	4,050			8,200	5,500
Delta	1,000	8,567	10,500	50	50	18,400	12,000
Oklahoma	1,400	5,207	6,000			7,000	5,000
Texas	2,600	6,051	6,600			14,700	8,000
Oklahoma-Texas	4,000	11,258	12,600	64	36	21,700	13,000
Montana	170	1,719	2,100			490	1,100
Idaho	200	2,253	2,800			450	250
Wyoming	80	668	850			250	250
Colorado	140	1,667	2,100			850	600
New Mexico	270	976	1,150			1,000	400
Arizona	400	623	700			350	200
Utah	50	1,449	1,800			250	150
Nevada	105	471	600			50	50
Mountain	1,415	9,826	12,100	60	40	3,690	3,000
Washington	250	1,950	2,400			1,000	600
Oregon	350	2,217	2,700			500	400
California	1,800	5,153	6,000			3,200	2,000
Pacific	2,400	9,320	11,100	75	25	4,700	3,000
United States	25,135	196,047	240,000	41.7	58.3	127,795	90,000

small grains from the windrow. Some of the machines have cutter bar attachments which permit handling grass silage from the standing crop. In all instances the silage, hay, or small grain is chopped in the field. The modern field forage harvester is also used for harvesting cornstalks after the grain is harvested, and for harvesting hay and other forage crops to be fed green.

It is estimated that about 102,000 field forage harvesters were on farms January 1, 1951. Some were reported in each State. However, the Lake States, Corn Belt, Great Plains, and Northeast States together had more than 80 percent of the total (table 21).

Sales of field forage harvesters in 1951 amounted to about 24,000 units (table 23). About 125,000 field forage harvesters were on farms January 1, 1952. Most of the forage harvesters now on farms were purchased in recent years and about 80 percent of them were less than 6 years old January 1, 1951 (table 22).

STATIONARY SILO FILLERS

This machine has been used on United States farms for more than half a century. For many years it was the only machine available for chopping silage. In recent years use of field forage harvesters has increased with about a corresponding decline in use of stationary silo fillers.

About 208,000 stationary silo fillers were estimated to be on farms January 1, 1951. Most of these machines were in the North Central States where silage is a major feed for dairy cattle. Four States, (Wisconsin, Minnesota, New York, and Pennsylvania,) had almost half of the stationary silo fillers in 1951 (table 21).

Less than 20 percent of the silo fillers on farms in 1951 was less than 6 years old, but almost a fourth was more than 20 years old (table 22). These stationary fillers varied little in size among the different State groups. For the entire country about 10 percent was 10 inches or less in size. About 42 percent of the stationary silo fillers had a width of throat of more than 14 inches (table 17).

HAMMER MILLS

High prices for feed, livestock, and livestock products and high farm incomes have greatly increased the demand for hammermills during the last decade. These machines are used principally for crushing farm-produced feeds for feeding to livestock. Use of hammer mills is now widespread but about 30 percent of the January 1951 numbers were in the five Corn Belt States (table 15). These States, together with the Lake States, the Great Plains States, and Oklahoma and Texas, had about 75 percent of the hammermills in 1951.

Large purchases of hammermills were made during the last decade (table 23). About 75 percent of the machines in 1951 was less than 11 years old. Only 3 percent were more than 20 years old (table 22).

Table 17.- Number and percentage distribution by width of throat, of stationary silo fillers on farms, specified areas, January 1, 1951

State group	Number Thousands	Percentage distribution by width of throat		
		10 inches and under	11 - 14 inches	More than 14 inches
		Percent	Percent	Percent
Northeast	53	11	51	38
Corn Belt	40	10	44	46
Lake States	74	10	46	44
Plains	19	14	44	42
South ^{1/}	12	20	45	35
West ^{2/}	10	13	40	47
United States	208	11	47	42

^{1/} Includes Appalachian, Southeast, Delta, and Oklahoma-Texas.

^{2/} Includes Mountain and Pacific.

POWER ELEVATORS

The increased use of combines, mechanical corn pickers, and hay balers have resulted in an increased demand for power elevators for handling crops and for storing them on farms.

Numbers of power elevators on farms January 1, 1951, were estimated at about 480,000. This equipment is reported in all parts of the country, but the numbers are especially important in the major grain-producing areas. About 45 percent of all power elevators were in the five Corn Belt States (table 15). The Corn Belt States, the Lake States, and the Great Plains States together had about 84 percent of the elevators in 1951.

Most of the small elevators are of the auger type and are used principally for handling grains. With the wide elevators, baled hay or grain can be handled. In 1951, about 28 percent of the elevators were 8 inches wide or less and 11 percent were more than 18 inches wide (table 18).

In recent years, farmers have bought large numbers of elevators (table 23). About two-thirds of the machines in 1951 were less than 6 years old. About 8 percent were more than 20 years old (table 22).

POWER SPRAYERS

Until recent years power sprayers were used on farms, almost entirely for spraying fruit and vegetable crops. Recently, new organic herbicides designed to destroy weeds as well as new kinds of insecticides have been developed. Along with the new pesticides, new types of power sprayers were designed for spraying field crops and pastures. Sales of power sprayers have been large recently (table 23). Of the 407,000 power sprayers on farms January 1, 1951, it is estimated that more than 70 percent were less than 6 years old. Only 20 percent of the power sprayers in 1951 were more than 10 years old (table 22).

Table 18.- Number and percentage distribution by width of elevator of power elevators on farms, specified areas, January 1, 1951

State group	Number : Thousands	Percentage distribution by width of elevator			
		8 inches : and less : Percent	9-12 : inches : Percent	13-18 : inches : Percent	More than : 18 inches : Percent
Northeast	23	11	13	28	48
Corn Belt	213	16	20	55	9
Lake States	75	32	21	39	8
Plains	113	40	22	32	6
South ^{1/}	26	41	14	25	20
Mountain	20	70	13	8	9
Pacific	9	57	11	12	20
United States	479	28.3	19.5	41.4	10.8

^{1/} Includes Appalachian, Southeast, Delta, and Oklahoma-Texas.

Many of the new type sprayers are low gallonage sprayers which require only 5 gallons or less of spray material per acre. With the development of low-gallonage sprayers the average tank capacity of sprayers probably is now substantially less than in earlier years.

Almost 30 percent of the sprayers on farms in 1951 had tank capacities of 50 gallons or less each. Only 20 percent had tanks with capacities in excess of 200 gallons each (table 19).

POWER DUSTERS

For years dusters were extensively used in the eastern cotton areas to control cotton insects, especially the cotton boll weevil. They were also used to some extent to apply pesticides to fruits, tobacco, potatoes, and vegetable crops. Most of the early dusters were hand or traction dusters.

The rapid increase in numbers of farm tractors in recent years has been accompanied by a material increase in volume of sales of power dusters (table 23).

It was estimated that there were 110,000 power dusters (excluding traction dusters) on farms January 1, 1951 (table 15). Almost two-thirds of them were less than 6 years old (table 22).

Each State has some power dusters. In 1951 around 57 percent were in the South where there are many small dusters. Of the total number of power dusters in 1951, about 25 percent had hopper capacities in excess of 100 pounds each (table 20).

Table 19.- Number and percentage distribution by capacity of tank, of power sprayers on farms, specified areas, January 1, 1951 ^{1/}

State group	Percentage distribution by capacity of tank										
	: Thousands	: 25 and less gallons	: 26-50 gallons	: 51-100 gallons	: 101-150 gallons	: 151-200 gallons	: 201-300 gallons	: 301-400 gallons	: 401-500 gallons	: More than 500 gallons	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Northeast	48	2.0	15.0	15.0	15.0	11.0	16.0	10.0	14.0	2.0	
Corn Belt	104	3.0	39.0	35.0	11.0	5.5	3.0	2.0	1.0	.5	
Lake States	53	2.5	26.0	33.0	16.0	7.0	10.0	3.0	2.0	.5	
Plains	53	2.0	27.0	26.0	27.0	6.0	8.0	2.0	1.0	1.0	
Appalachian	19	6.0	25.0	23.0	9.0	12.0	13.0	3.0	7.0	2.0	
Southeast	13	7.0	20.0	18.0	9.0	2.0	5.0	24.0	13.0	2.0	
Delta	12	10.0	39.0	32.0	4.0	8.0	3.0	1.0	2.0	1.0	
Oklahoma-Texas	26	2.0	34.0	37.0	14.0	5.0	5.0	1.0	1.5	.5	
Mountain	27	2.0	25.0	32.0	14.0	10.0	12.0	3.0	1.5	.5	
Pacific	52	2.0	10.0	20.0	14.0	13.0	15.0	13.0	6.0	7.0	
United States:	407	2.9	26.7	28.0	14.6	7.9	8.9	5.2	4.1	1.7	

^{1/} Does not include electric sprayers.

Table 20.- Number and percentage distribution by capacity of hopper, of power dusters on farms, specified areas, January 1, 1951

Region	Number	Percentage distribution by capacity of hopper				
		50 and less	51-100	101-150	151-200	More than 200
	:Thousands:	Percent	Percent	Percent	Percent	Percent
North <u>1/</u>	: 23	17	42	18	14	9
South <u>2/</u>	: 63	43	44	7	2	4
West <u>3/</u>	: 24	17	39	14	22	8
United States	: 110	31.9	42.5	10.8	8.9	5.9

1/ Includes Northeast, Corn Belt, Lake States, and Plains States.

2/ Includes Appalachian, Southeast, Delta, and Oklahoma-Texas.

3/ Includes Mountain and Pacific States.

MILKING MACHINES

Mechanical milkers were first used in this country around 1890. Until 1905 practically all of the machines were manually operated.

Gasoline, steam, and electricity were used as sources of power for operating the early power milking machines. Expansion in use of milking machines was fairly important from 1910 to 1920, when the number of farms having milking machines increased by more than 300 percent (table 1).

From January 1, 1942, to January 1, 1945, numbers of farms with milking machines increased by more than 100,000. It is estimated that almost 700,000 farms had milking machines on January 1, 1952. The three Lake States, and Iowa, New York, Ohio, and Pennsylvania had about 57 percent of the farms with milking machines in 1952 (table 21).

Table 21.- Number of field forage harvesters, stationary silo fillers, and number of farms with milking machines, by States, specified years

State and group	Field forage harvesters			Stationary	Farms with milking machines			
	January 1, 1950	January 1, 1951	January 1, 1952	silo fillers: Jan. 1, 1951	January 1, 1945	1950	January 1, 1952	
	estimated	estimated	estimated	estimated	Census	Census	estimated	
	Number	Number	Number	Number	Number	Number	Number	
New England	1,500	1,800	2,500	10,300	15,400	19,086	25,560	26,200
New York	5,000	6,300	7,500	22,000	35,000	40,792	50,840	52,000
New Jersey	600	800	1,000	2,000	3,000	3,570	3,803	3,900
Pennsylvania	3,500	4,300	5,200	16,000	14,000	20,025	35,292	37,000
Delaware	100	125	150	200	900	653	1,053	1,100
Maryland	900	1,000	1,150	2,500	2,100	3,156	5,559	5,800
Northeast	11,600	14,325	17,500	53,000	70,400	87,282	122,107	126,000
Ohio	3,500	4,500	5,500	10,000	13,000	20,059	39,439	41,800
Indiana	2,200	3,000	3,700	5,000	8,000	13,826	28,121	29,400
Illinois	5,800	7,500	9,000	8,000	12,000	19,479	31,775	33,600
Iowa	6,500	9,000	12,000	10,000	14,000	21,236	42,305	44,800
Missouri	2,000	2,500	3,000	7,000	2,000	4,092	14,180	15,400
Corn Belt	20,000	26,500	33,200	40,000	49,000	78,692	155,820	165,000
Michigan	3,500	4,500	5,500	12,000	20,000	27,060	42,264	44,500
Wisconsin	13,000	15,500	18,500	40,000	50,000	66,057	94,201	99,000
Minnesota	7,500	9,500	11,300	22,000	24,000	37,913	65,139	70,500
Lake States	24,000	29,500	35,300	74,000	94,000	131,030	201,604	214,000
North Dakota	2,000	2,500	3,000	3,000	1,800	3,232	7,612	8,200
South Dakota	2,000	2,500	3,000	3,000	1,200	1,484	5,667	6,200
Nebraska	3,000	3,500	4,000	5,000	1,200	2,612	9,452	10,200
Kansas	5,000	6,000	7,300	8,000	3,000	5,338	13,266	14,400
Great Plains	12,000	14,500	17,300	19,000	7,200	12,666	35,997	39,000
West Virginia	200	300	400	1,000	500	684	2,303	2,900
Kentucky	600	800	1,000	1,500	700	1,324	7,137	9,200
Tennessee	500	600	700	1,000	1,100	1,795	6,245	7,700
Virginia	700	900	1,100	2,500	700	1,248	4,107	5,300
North Carolina	200	250	300	1,000	200	604	3,570	4,900
Appalachian	2,200	2,850	3,500	7,000	3,200	5,655	23,362	30,000
South Carolina	200	250	300	300	100	484	1,364	1,800
Georgia	300	375	400	300	200	920	3,029	4,000
Florida	50	75	100	100	300	325	983	1,300
Alabama	100	150	200	300	200	600	2,213	2,900
Southeast	650	850	1,000	1,000	800	2,329	7,589	10,000
Mississippi	100	200	300	300	300	630	3,463	4,100
Louisiana	100	150	200	200	200	686	2,581	3,200
Arkansas	400	500	600	500	200	451	2,893	3,700
Delta	600	850	1,100	1,000	700	1,767	8,937	11,000
Oklahoma	800	900	1,000	1,000	1,000	2,517	7,592	9,000
Texas	900	1,200	1,500	2,000	2,000	3,521	10,048	12,000
Oklahoma-Texas	1,700	2,100	2,500	3,000	3,000	6,038	17,640	21,000
Montana	1,000	1,250	1,500	400	1,100	1,569	3,153	3,800
Idaho	1,000	1,250	1,500	600	2,800	6,803	11,782	13,400
Wyoming	300	400	500	300	200	598	1,081	1,200
Colorado	2,100	2,500	2,800	1,700	1,200	1,991	4,496	5,400
New Mexico	200	250	300	400	200	428	923	1,100
Arizona	250	325	400	300	300	794	910	1,000
Utah	400	500	600	700	900	1,809	3,869	4,600
Nevada	200	250	300	100	200	318	450	500
Mountain	5,450	6,725	7,900	4,500	6,900	14,310	26,664	31,000
Washington	800	1,000	1,200	2,000	5,500	7,931	11,529	12,500
Oregon	800	1,200	1,500	2,000	4,000	6,214	9,163	10,000
California	1,200	1,600	2,000	11,500	10,000	11,151	15,451	16,500
Pacific	2,800	3,800	4,700	5,500	19,500	25,296	36,143	39,000
United States	81,000	102,000	124,000	208,000	254,700	365,065	635,863	686,000

Table 22.- Number and age distribution of specified machines on farms, by State groups, United States, January 1, 1951

		Tractor moldboard plows					
		Age distribution in years					
State group	Jan. 1, 1951	5 and less	6 - 10	11 - 15	16 - 20	21 and over	
	Thousands	Percent	Percent	Percent	Percent	Percent	
Northeast	279	46	28	19	4	3	
Corn Belt	752	44	26	23	4	3	
Lake States	437	43	27	22	5	3	
Great Plains	353	38	22	21	10	9	
Appalachian	170	68	18	9	3	2	
Southeast	47	65	22	9	2	2	
Delta	64	70	20	6	2	2	
Oklahoma-Texas	132	44	27	20	5	4	
Mountain	129	45	24	17	8	6	
Pacific	130	42	25	21	7	5	
United States	2,493	45.8	25.0	19.9	5.3	4.0	
		Tractor disk plows					
Northeast	11	61	20	5	9	5	
Corn Belt	24	60	17	15	4	4	
Lake States	11	44	21	9	10	16	
Great Plains	14	36	19	16	12	17	
Appalachian	59	70	17	8	2	3	
Southeast	65	74	16	4	3	3	
Delta	43	75	13	6	3	3	
Oklahoma-Texas	64	49	20	14	7	10	
Mountain	14	45	17	17	12	9	
Pacific	21	53	24	11	4	8	
United States	326	61.8	17.6	9.5	5.0	6.1	
		Tractor listers and middlebusters					
Northeast	2	55	30	10	3	2	
Corn Belt	28	44	35	15	4	2	
Lake States	2	55	31	9	3	2	
Great Plains	140	35	29	16	11	9	
Appalachian	24	80	12	5	2	1	
Southeast	27	81	15	2	1	1	
Delta	54	78	14	5	2	1	
Oklahoma-Texas	200	41	32	18	6	3	
Mountain	25	35	34	21	7	3	
Pacific	11	56	31	4	5	4	
United States	513	47.5	27.7	14.2	6.4	4.2	

Table 22.- Number and age distribution of specified machines on farms,
by State groups, United States, January 1, 1951 - Continued

State group	One-way disk plows or tillers					
	Age distribution in years					
	Jan. 1, 1951	5 and less	6 - 10	11 - 15	16 - 20	21 and over
	Thousands	Percent	Percent	Percent	Percent	Percent
Northeast	1	80	10	10	--	--
Corn Belt	5	54	17	24	4	1
Lake States	2	66	13	7	12	2
Great Plains	69	44	20	16	10	10
Appalachian	10	70	24	5	1	--
Southeast	22	59	29	10	2	--
Delta	7	66	18	14	2	--
Oklahoma-Texas	86	37	24	24	6	9
Mountain	32	48	20	18	5	9
Pacific	16	35	33	24	4	4
United States	250	45.0	22.9	18.6	6.2	7.3
			Combines-power take-off			
Northeast	17.2	46	34	16	3	1
Corn Belt	144.9	48	32	16	3	1
Lake States	31.1	46	32	18	3	1
Great Plains	42.9	37	30	30	2	1
Appalachian	27.9	44	42	11	2	1
Southeast	15.5	51	38	8	2	1
Delta	9.3	53	29	15	2	1
Oklahoma-Texas	27.4	41	34	20	3	2
Mountain	9.3	24	47	21	4	4
Pacific	2.0	30	40	26	3	1
United States	327.5	44.8	33.6	17.7	2.7	1.2
			Combines-mounted motor			
Northeast	20.8	63	24	8	3	2
Corn Belt	110.2	61	20	11	4	4
Lake States	48.0	63	22	10	3	2
Great Plains	116.9	39	23	22	8	8
Appalachian	16.5	69	23	5	2	1
Southeast	8.2	70	19	7	3	1
Delta	7.1	65	26	6	2	1
Oklahoma-Texas	32.0	38	19	23	10	10
Mountain	37.7	43	27	15	6	9
Pacific	21.9	36	28	19	8	9
United States	419.3	51.1	22.4	15.1	5.7	5.7

Table 22.- Number and age distribution of specified machines on farms, by State groups, United States, January 1, 1951 - Continued -

Combines, self-propelled

State group	Age distribution in years					
	Jan. 1, 1951	5 and less	6 - 10	11 - 15	16 - 20	21 and over
	Thousands	Percent	Percent	Percent	Percent	Percent
Northeast	1.0	95	5	--	--	--
Corn Belt	10.9	95	5	--	--	--
Lake States	4.9	90	8	2	--	--
Great Plains	22.2	90	7	3	--	--
Appalachian	.6	95	5	--	--	--
Southeast	.3	95	5	--	--	--
Delta	3.6	97	3	--	--	--
Oklahoma-Texas	6.6	90	9	1	--	--
Mountain	8.0	90	8	2	--	--
Pacific	5.1	86	12	2	--	--
United States	63.2	91.1	7.2	1.7	--	--

Combines, all types

Northeast	39	56.4	27.9	11.3	2.9	1.5
Corn Belt	266	55.3	25.9	13.3	3.3	2.2
Lake States	84	58.3	24.9	12.5	2.8	1.5
Great Plains	182	44.7	22.7	21.6	5.6	5.4
Appalachian	45	53.8	34.5	8.7	2.0	1.0
Southeast	24	58.0	31.1	7.6	2.3	1.0
Delta	20	65.2	23.3	9.1	1.6	.8
Oklahoma-Texas	66	44.4	24.2	19.6	6.1	5.7
Mountain	55	46.6	27.6	14.1	4.8	6.9
Pacific	29	44.4	26.0	16.5	6.2	6.9
United States	810	51.7	25.7	15.1	4.0	3.5

Corn pickers, all sizes

Northeast	18.0	76	17	6	1	--
Corn Belt	300.0	65	21	11	2	1
Lake States	75.0	68	21	7	2	2
Great Plains	100.0	70	18	6	4	2
Appalachian	14.5	76	20	3	1	--
Southeast	2.5	77	16	6	1	--
Delta	2.5	78	21	1	--	--
Oklahoma-Texas	5.6	92	7	1	--	--
Mountain	3.3	79	17	2	2	--
Pacific	.6	75	20	5	--	--
United States	522.0	67.6	20.1	8.8	2.3	1.2

Continued -

Table 22.- Number and age distribution of specified machines on farms, by State groups, United States, January 1, 1951 - Continued -

Power sprayers

State group	Age distribution in years					
	Jan. 1, 1951	5 and less	6-10	11-15	16-20	21 and over
	Thousands	Percent	Percent	Percent	Percent	Percent
Northeast	48	47	19	20	7	7
Corn Belt	104	77	5	6	6	6
Lake States	53	75	10	8	4	3
Great Plains	53	85	4	4	4	3
Appalachian	19	67	10	12	6	5
Southeast	13	67	14	10	5	4
Delta	12	80	7	6	4	3
Oklahoma-Texas	26	83	5	5	4	3
Mountain	27	77	5	8	6	4
Pacific	52	61	8	14	9	8
United States	407	71.9	8.1	9.1	5.8	5.1

Power dusters

North $\frac{1}{2}$	23	50	31	9	5	5
South $\frac{2}{3}$	63	73	17	4	3	3
West $\frac{3}{4}$	24	62	26	5	3	4
United States	110	65.8	21.9	5.3	3.4	3.6

Hammer mills

Northeast	34	38	33	21	6	2
Corn Belt	206	39	34	18	6	3
Lake States	89	48	31	15	4	2
Great Plains	124	43	32	16	6	3
Appalachian	56	55	28	13	3	1
Southeast	25	56	29	11	2	2
Delta	25	43	40	13	3	1
Oklahoma-Texas	85	38	33	19	7	3
Mountain	31	35	40	16	5	4
Pacific	14	36	40	15	5	4
United States	689	42.5	33.0	16.6	5.3	2.6

Field forage harvesters

United States	102	81	12	5	1	1
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Stationary silo fillers

Northeast	53	20	23	23	10	24
Corn Belt	40	11	19	28	18	24
Lake States	74	19	19	24	13	25
Great Plains	19	19	17	24	15	25
South $\frac{2}{3}$	12	25	22	21	11	21
West $\frac{3}{4}$	10	24	21	21	11	23
United States	208	18.3	20.1	24.2	13.2	24.2

Table 23.- Manufacturer's shipments of farm machines for domestic use, United States, 1935-39 average, and 1940-51 1/

Item	1935-39 average	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands
Tractors													
Tractors													
Wheel (farm use only) 2/	151.0	206.0	276.0	204.7	76.0	198.0	177.0	193.0	333.0	433.0	451.0	424.6	467.7
Crawler (farm use only)	4.8	9.7	12.5	1.6	1.5	4.4	8.0	7.2	9.0	12.8	12.2	10.7	12.1
Garden (all uses)	7.5	8.8	16.1	12.5	9.1	14.9	26.4	109.2	159.0	158.9	126.3	149.7	164.3
Flows and Listers													
Flows:													
Tractor moldboard	102.5	146.4	179.0	147.3	52.0	116.1	143.0	135.4	216.4	271.8	278.3	310.0	294.8
Tractor disk plows	5.8	10.0	14.0	12.8	4.5	11.8	10.0	10.0	35.9	53.3	55.4	45.5	37.8
Horse-drawn	190.0	116.0	114.6	101.9	60.2	75.7	76.8	74.4	98.6	96.6	45.4	29.0	20.6
One-way disk plows or tillers	9.5	11.7	17.1	13.4	4.8	10.7	10.4	14.9	23.2	32.7	20.8	18.6	20.7
Listers, drawn and mounted (with or without planting attachments)	30.1	33.8	42.3	34.8	15.8	36.3	59.4	38.7	46.8	60.0	60.4	39.2	29.7
Harrows, Rollers and Pulverizers													
Disk harrows, all types	91.1	100.2	138.4	108.4	48.0	117.7	111.0	161.4	219.4	304.4	296.0	279.0	296.8
Spike-tooth harrows (no. of sections)	172.2	176.1	233.3	189.1	66.7	191.4	193.1	232.6	343.1	477.9	353.3	315.7	339.1
Spring-tooth harrows (no. of sections)	106.1	96.4	108.5	103.7	22.5	90.1	99.9	99.5	120.4	167.8	160.2	133.0	145.4
Planting, Seeding and Fertilizing Machinery													
Grain drills, plain and fertilizer types	36.5	35.8	47.4	41.4	13.7	46.4	49.1	34.1	46.7	61.9	62.8	67.3	66.7
Corn and cotton planters:													
Drawn, 1-row	56.7	46.0	47.6	46.9	21.1	34.0	32.7	27.6	31.6	37.5	32.3	34.7	26.3
All other (mostly 2-row and larger)	55.2	40.4	59.6	60.0	20.0	55.4	58.1	47.3	69.7	113.7	156.6	154.2	165.5
Manure spreaders	40.7	45.8	69.3	62.5	18.6	46.5	46.2	43.0	58.8	113.1	116.3	98.0	102.1
Potato planters (all sizes)	3.4	3.8	3.2	3.0	2.8	4.3	4.8	4.6	3.4	2.9	1.6	1.0	N.A.
Beet and bean drills	1.2	.9	.8	1.3	.7	1.1	1.8	1.9	2.9	3.9	1.4	.9	.6
Cultivators and Weeders													
Cultivators, corn and cotton:													
1-horse	89.2	73.6	65.2	75.6	41.9	54.4	61.9	68.6	64.7	89.5	60.4	23.0	17.2
2-horse	51.8	33.8	36.0	30.7	9.3	31.8	27.2	19.6	7.7	23.7	16.5	3.5	1.3
Tractor-drawn and mounted	87.6	91.4	170.3	160.3	85.0	178.4	180.8	142.9	225.1	347.8	295.4	227.5	278.8
Rotary hoes	2.8	4.4	7.4	5.7	4.6	8.0	8.0	9.8	28.0	58.4	43.9	45.4	80.8
Field cultivators	7.4	7.8	13.0	13.1	2.9	14.6	16.3	19.0	31.2	59.7	49.4	33.0	37.2
Sprayers and Dusters													
Power sprayers	8.9	4.6	6.1	5.5	3.9	6.5	8.3	14.5	31.4	100.2	62.3	68.0	75.1
Power dusters	1.4	1.8	3.3	4.9	3.6	7.0	6.8	10.0	13.2	15.8	12.3	21.2	28.5
Harvesting Machinery													
Grain combines (all sizes) 2/	24.1	37.6	59.5	43.4	25.0	41.3	48.8	48.0	70.6	88.9	102.6	114.2	106.2
Grain binders (all incl. rice)	37.7	Not available		4.2	4.6	9.4	7.8	N.A.	8.0	Not available			
Potato diggers (1- & 2-row elevator type)	3.2	3.2	3.2	3.2	2.0	5.6	5.0	4.7	4.3	4.9	2.1	1.9	.6
Beet lifters	1.4	1.5	1.8	2.0	1.1	.8	1.4	1.7	2.4	1.8	.2	-	-
Beet harvesters			Not available			.4	.3	1.3	1.5	2.6	.9	1.3	2.1
Corn pickers	10.0	10.8	19.4	13.9	12.2	23.1	36.8	34.9	66.4	76.7	89.1	88.3	89.8
Elevators	4.5	8.1	11.5	7.8	11.6	16.3	21.7	36.1	42.7	72.7	83.9	96.3	98.7
Field forage harvesters (includes row type and field hay choppers)			Not available			2.6	2.6	6.7	15.2	16.0	18.5	22.9	23.6
Cotton pickers and strippers			Not available							2.3	2.3	2.3	9.0
Haying Machinery													
Mowers:													
Tractor mounted or semi-mounted													
Horse or tractor-drawn	44.7	70.8	47.2	31.5	70.8	67.3	76.2	130.9	211.4	184.0	168.7	220.2	
All types and sizes	95.7	99.9	154.6	117.5	46.6	119.1	113.7	112.9	175.0	259.0	216.6	197.9	225.9
Rakes:													
Side-delivery	20.0	25.3	35.2	29.2	13.9	38.5	37.9	27.8	57.7	89.7	107.1	108.6	122.4
Sulky or dump	34.0	29.7	40.0	26.5	9.6	18.7	23.0	17.8	29.7	22.5	18.2	22.7	24.3
Balers:													
Stationary (all types)		5.7	6.1	3.2	1.5	4.4	4.6	5.6	6.2	3.4	2.3	.7	.5
Pick-up wire twine	4.0	(1.4)	(7.4)	(8.9)	(4.2)	(11.8)	(12.3)	(10.8)	6.2	14.0	18.4	17.7	16.2
									18.9	30.4	32.7	37.2	44.7
Machines for Preparing Crops for Market or for Use													
Peanut pickers and threshers:	.8	.7	.9	2.9	1.4	.8	1.1	1.8	2.1	1.9	1.4	1.2	1.3
Stationary threshers	5.3	2.5	2.8	1.8	.8	1.7	1.1	1.5	1.0	1.3	.7	.3	.3
Corn shellers (power)	4.9	9.4	7.0	6.3	4.4	8.3	11.2	16.6	24.9	18.5	19.5	14.0	12.0
Hammer and roughage mills	23.7	49.5	58.8	51.0	23.4	52.4	56.4	94.8	81.9	64.4	39.3	28.6	28.5
Feed grinders (burr type)	6.3	6.3	7.2	5.7	3.6	6.5	5.3	9.4	10.0	7.8	3.8	4.4	6.7
Silo fillers	9.2	11.1	10.7	9.9	4.7	7.9	8.1	8.4	11.7	9.9	5.1	1.9	1.9
Farm Dairy Machines and Equipment													
Cream separators	79.7	100.0	125.5	99.8	32.8	68.6	85.9	109.6	93.3	50.0	35.2	37.1	25.1
Milking machines (vacuum pump units)	14.9	32.2	51.2	29.1	44.2	74.2	116.5	128.0	75.8	51.4	40.5	41.6	34.2

1/ From data developed by the Bureau of the Census, U. S. Department of Commerce.

2/ Includes imports.

